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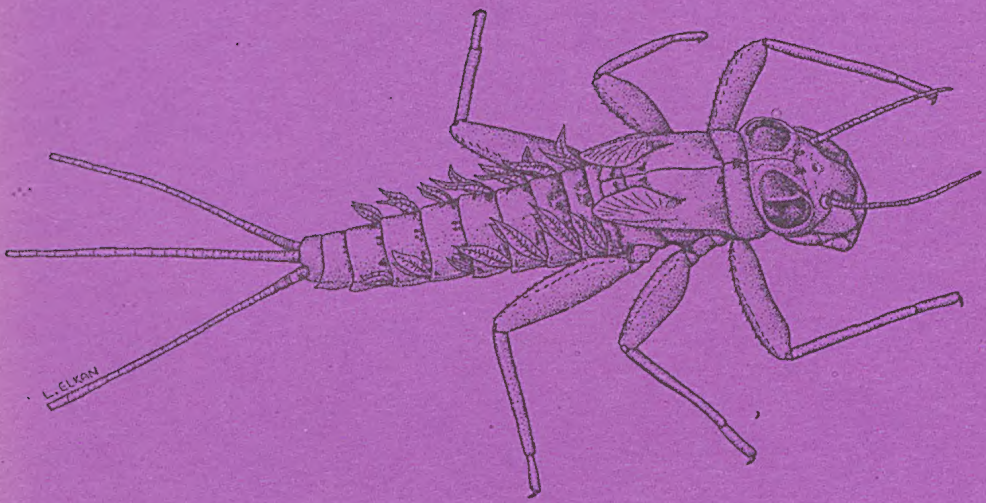
Australian Society
for Limnology Inc.



NEWSLETTER

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June 1999

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AUSTRALIAN SOCIETY FOR LIMNOLOGY INC.

The Australian Society for Limnology (ASL) is an Australian-based scientific society whose focus is the study and management of inland waters. The ASL was established in 1961, and has a current membership of over 500 researchers, managers, engineers, teachers and tertiary level students from all states and territories. Members have a strong professional interest in inland aquatic issues, including the maintenance of biodiversity, the maintenance and/or restoration of water quality, and the wise use of aquatic resources. The Society also has a strong interest in fostering the scientific and intellectual development of tertiary students.

The Society includes members working in government agencies, tertiary institutions and many industries related to aquatic resources. Through their daily activities, members have contact with local communities and are in a sound position to interpret and advise on inland water issues. The Society has a substantial knowledge base, and has assumed a responsibility to ensure that this is available to those who manage inland waters.

Accordingly, the charter of the ASL is to further our understanding of Australia's inland waters and to promote their wise use and sustainable management. In this manner we will contribute to the continued existence of this valued resource and the maintenance and enhancement of the quality of life for all Australians.

The ASL regularly produces a newsletter with notes on limnological activities, articles of interest, book reviews and announcements of upcoming events likely to be of interest to Members.

EXECUTIVE OFFICERS 1997-98

President
Dr Pierre Horwitz
Centre for Ecosystem Management, Edith Cowan University, Joondalup, WA 6027.
Ph: 08-9400 5558, Fax 08-9400 5717 Email: p.horwitz@cowan.edu.au;

Vice-President
Dr Jane Chambers
Environmental Science, Murdoch University, Murdoch WA 6150
Ph: 08-9360 2739 Fax: 08-9310 4997 Email: chambers@essun1.murdoch.edu.au

Immediate Past President
Dr Max Finlayson
ERISS, Locked Bag 2, Jabiru, NT 0886
Ph: 08-8979 9756 Fax: 08-8979 2149 Email: maxf@eriss.erin.gov.au

Secretary
Dr Richard Marchant
Museum of Victoria, 71 Victoria Cresent, Abbotsford, VIC 3067.
Ph: 03-9284 0218. Fax 03-9416 0475. Email: rmarch@mov.vic.gov.au.

Treasurer/Membership Officer
Mrs Margaret Hart
22 Netherby Avenue, Mulgrave, VIC 3170.
Ph: 03-9545 3549. Fax: 03-9545 3549 Email m.hart@sci.monash.edu.au

Membership Information and a list of the Regional Executive Officers can be found at the back of this Newsletter

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ASL Home Page

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EDITORIAL

I made it! I have completed a trilogy. Yes, this is the third newsletter to come under my editorship. Now I have embarked on creating a trilogy of trilogies a la Steven Donaldson, Robert Jordan or Len Deighton. Then there is a trilogy of trilogy trilogies (3 x 3 x 3 =27 issues, divided by 4 is about 7 years), but I think I'll leave that to someone else. Okay, I freely admit delusions of grandeur and maybe the odd psychosis or neurosis. It all started with some fan mail I received recently, but I won't go into that.

This newsletter sees the starting of developing the "top ten" issues in limnology today. Also, the process of the name change is described. There is a decent amount of gossip, obviously too many people are talking over the back fence and not working again. I have been stealing stuff of the internet (kleptomania is another one of my problems), and the odd newsgroup, about aquatic matters and these make it into the articles section. Lor Wai Tan has given us a glimpse of life on the other side. The number of conferences is increasing, even students nowadays are getting in on the act. The big ASL/NZSL conference has been launched, with details included in this issue. You will probably be receiving a flier about it as well in the not to distant future. The ASL Bibliography is in danger of extinction and probably will disappear by the next issue. Talking about extinct, someone shot the last of the XX words and given its breeding by budding nature (there's probably a proper word for that) there will be no more. People wanting the solution to the last one just give me a call or something.

Happy reading.

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REPORT FROM THE PRESIDENT

Policies and the top ten - limnology for the new millenium

Recently the Society's executive approved the formation of a policy standing committee to be proactive on limnological issues on your behalf. In essence it was agreed that the committee would have the same term as an executive (which is set to become two years after the next AGM), and would be comprised of two nominees from the general membership, the President, Immediate Past President or nominee and one State Executive member.

One of the first tasks of the committee will be to prepare a document which presents the Society's view of Australia's top ten limnological "issues". The identification of these priorities would be timely (given the perception that we are about to turn a corner, into a new millenium). With appropriate support from the membership and promotion by the Society, we will have the potential at least to influence legislative and policy directions, government funding priorities for research, or decision-making in a specific context.

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Another approach might be to prepare a forecast of the top ten hot spots for limnology, places where significant water resource conflicts, or water management issues will arise within a nominated time-frame. Such "places" might be geographical and real (like domestic water supplies for Adelaide, environmental flows in the Riverina, dryland salinity in south-western Australia), or relatively abstract and Australia-wide (for instance public health issues associated with mosquito borne disease, water pricing policies, climate change).

Letting the mind wander even further in this direction, we might argue that market fundamentalism, Australia's population policy.

Whichever approach we take, perhaps we need to take care to avoid conducting a simple cataloguing exercise, and repeating oft-quoted phrases from water management texts of the last 25 years. The selection of the top ten may well be a balance between the dangers of simply focusing in a reductionistic way on limnological surgery, and the mind-bending complexities of holistic overview and open systems.

The value of the exercise is intuitively obvious, and whatever the final "top ten", they should be supported by careful elaboration, including background description and results of experimentation, identification of seminal works, and the preparation of recommendations for management actions and changes in policies. I know that the committee can rely on the support of the Society here, because these are the strengths of its membership.

Pierre Horwitz
President, 5th June 1999.

GOSSIP.

(In no particular order this time – ED)

INLAND FISHERIES COMMISSION -TAS

The future of the Tasmanian Inland Fisheries Commission remains uncertain although the Minister has promised to keep us as an entity and outside of the government dept of Primary Industries, Water and Environment. You may well ask what we do if it's not water and environment....

Everyone is busy as usual especially since we still have important positions unfilled (Director and deputy). Carp control work has wound down after a hectic summer of radio tracking, netting and electrofishing. A mark-recapture population estimate was conducted in Lake Crescent and showed the effectiveness of management so far, with estimates of about 400 adults and 1500 juveniles. The team is short two staff since **Chris Cleary** went overseas and **Dave Jarvis** was appointed as the NHT-funded extension officer. **Dave** will be working with Rivercare groups and will focus on threatened species including *Astacopsis gouldi*. The carp boss **John Diggle** has temporarily forsaken his desk in favour of a jack hammer and house demolition.

It's all happening in the area of Commercial fisheries management (**Frances Ruwald, Sam Thalmann**), with a major project about to kick off investigating the stocks and sustainability of glass eels for possible development of a new industry.

Native fish conservation work by **Jean Jackson** and **Brett Mawbey** continues to focus on actions of the recovery plan for 5 threatened galaxias species. Recent successes include discovery of new populations of Swan and Clarence galaxias. Five other endemic galaxiid species may soon be added to the Threatened Species Protection Act. The draft recovery plan for *Astacopsis gouldi*, prepared by **Dave Blühdorn** for the RFA, is now being updating for submission to government endorsement processes.

Recreational fisheries work by **Rob Freeman** and **Stu Chilcott** at this time of year involves lots of monitoring of trout spawning runs, with collection of data on fish condition and scale samples. The poor condition of Lake Sorell continues to be a major problem and a fisheries biologist to concentrate on this should be selected soon.

The hydro team of **Dave Andrews**, **Marty Jack** and **Al Morton** are expanding their horizons into macroinvertebrate river health assessment, river algae, fish migration and threatened species work, as well as continuing traditional water quality and erosion monitoring.

from

Jean Jackson

EDITORIAL

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Pierre Horwitz
President, 5th June 1999.

DEPARTMENT OF ENVIRONMENTAL SCIENCES (UTS GORE HILL CAMPUS) AND CENTRE FOR ECOTOXICOLOGY (EPA GORE HILL LABS) - NSW

After a period of diapause the Department of Environmental Sciences (UTS Gore Hill Campus) and Centre for Ecotoxicology (EPA Gore Hill Labs) have come good with the goods for the newsletter.

There is a number of post-grad projects on the home stretch - **Simon Mitrovic** is on the lonely path of writing a thesis (PhD) on the factors responsible for cyanobacterial blooms in the Darling. He's now ensconced on the north coast of NSW.

Benedict Yaru is writing his 27th paper (only kidding!) on the interactions between copper, plants, sediments and water in the raunwaras (lakes) of the Fly River flood plain. **Ben** is now based full-time in Sydney.

After returning rejuvenated from the Aquatic Ecology Postgrad Workshop, **Grant Hose** is bottling the last of the bugs from his mesocosm experiments. He is looking forward to spending quality time with his computer with the hope of coming up with a thesis (PhD) by the end of the year.

Scott Markich has successfully completed his PhD (Effects of Biological and Physic-Chemical Variables on the Valve Movement Responses of Freshwater Bivalves to Manganese, Uranium, Cadmium and Copper.....thew!). **Scot** now has a tenured Research Scientist position with ANSTO, so it's congratulations on two fronts.

Natasha Franklin has just completed one year of her (PhD) looking at the toxicity of metals and their mixtures to unicellular algae using flow cytometry. Arhhh, when I was a boy, a Sedgwick-Rafter cell and monocle was all a good algologist needed.

Colette Thomas is in the throws of thesis (MSc) writing (Ecotoxicology of the pyrethroid pesticide, deltamethrin to Australian native fish and invertebrates). **Colette** is currently in Germany presenting the results of her ecotox work at the SETAC Europe conference.

Cyrus Edwards, UTS "student in absentia" is writing up his MSc on the effects of the remediated Rum Jungle mine on the macroinvertebrate community composition in the eastern branch of the Finniss River, NT. We will just say that one again.... **IS WRITING UP HIS MSc**.... that's right isn't **Cyrus**...? Going troppo is no excuse any more, we know were you live and have a (fading) memory of what you look like.

Ron Patra has pulled together his final draft (yes **Ron**, this is the final) on the effect of temperature on toxicity of chemicals to native fish and invertebrates.

Hertien Surtikanti, also with a tox bent, is busy crossing the I's and dotting the T's on her PhD draft "the ecotoxicology of the sediments in the freshwater section of the Hawkesbury-Nepean River system". **Hertian** is irresistibly got one eye back at home (Indonesia) now - but just like all PhD's, just a little more pain is necessary - **Hertian**, it is dot the I's and cross the T's.....!

Two people with a long road to travel yet are **Rebecca Rose** who is in her 2nd year (PhD) looking at how various environmental factors and chemicals affect cladoceran life histories. The second is **Eren Turak** who has discovered that PhD by distance education is logistically no fun, so has decided to use UTS as home base while trying to get a clear picture of the workings of black water streams (there seems to be a contradiction there somewhere, this probably explains why **Eren** has

also been seen walking the hallways saying incoherent things like "gilvin, fulvic tea and gelbsbardenfarten).

Ross Hyne, Alex Leonard, Fleur Pablo and **Ivan Kennedy** have gained 3 years funding from the CRDC (Cotton Research and Development Corporation) to continue studies in the Namoi River. This new project aims to validate the use of passive samplers as a means of estimating river contamination with pesticides (....and no **Ross**, you cannot turn off the water at Keepit Dam so you can walk out on the streambed to collect the samples). **Alex** is also seeing the light at the end of the tunnel for his PhD write up on the ecotoxicology and bioavailability of the pesticide endosulfan in sediment and trophic relationships.

Joanne Hawkins is about to start her MSc with **Ross Hyne** and **Richard Lim** looking at the toxicity of pesticide mixtures on riverine macroinvertebrates.

Anne Colville is working (PhD) on the effects of the pesticide tebufenozide (an insect growth regulator) on stream macroinvertebrates. Both **Anne** and **Grant** will be mesocosm'ed out by the end of their projects and realise why the WORD 5 spell check suggests "masochism" as an alternate.

John Chapman and other faithful souls at the CET (and beyond) have completed the revision of ANZECC/ARMCANZ Australian and New Zealand water quality guidelines, these are undergoing approval by Commonwealth committees before release for public consultation later this year. The Draft Guidelines are in five volumes, plus an Overview. The guidelines have been developed on a completely new concept, with a philosophy of applying the "trigger values" to specific sites using a risk-based assessment model. The CET has been involved in deriving the toxicant trigger values for over 200 chemicals and in setting up the scheme for application of these values.

Richard Lim and **Jennifer Batty** (in a UTS-Napier University project), on 'The effects of reproductive endocrine disruptors on the mosquitofish *Gambusia affinis holbrooki*' is currently on-going. **Jennifer** is an academic from the Department of Biological Sciences, Napier university, Edinburgh, UK. **Richard** on the other hand is a new age UTS academic buried under tons and tons of theses (spelled with a TH) 'drafts for comment' from the above students, and also happy to be part of any restructuring that the bean counters can offer.....it used to be fun to be an academic.

by

Peter Jones

Peter Adcock has just been awarded a contract in association with Woodward Clydeto review and design a wastewater reuse scheme for Gold Coast City Council. The project involves collecting wastewater from several sewage treatment works, channelling the water inland through an array of basins and wetlands prior to irrigation of sugar cane. A major issue with respect to this development will be managing the water balance and acid sulphate soils.

Bill Fotheringham is continuing to manage the wetlands at the Olympic Site, which lies between the Athletes Village and the Main Stadium. There are several issues Bill is dealing with on this site, including water level management to control weeds whilst also establishing desirable species and not affecting the habitat of the Green and Golden Bell Frog and the Japanese Snipe.

SIMON WILLIAMS WILL SOON BE A FATHER!!!

AND

CONGRATULATIONS TO ROD HARWICK, PROUD FATHER OF TWINS

DEAKIN UNIVERSITY AT WARRNAMBOOL - VIC

A large contingent of staff and students went to the International Aquaculture conference in April - leaving the School nice and quiet for the rest of us. **Sarah Boulton** has just handed in her Honours thesis on the limnology of deep pools in the Glenelg River, supervised by **Brad Mitchell. Belinda Robson** and **Ed Chester** are about to begin some work on mayflies in the Otways, looking at their responses to flow conditions - mid-winter in the Otways...hmmm...but at least it has started to rain! We have had a very dry autumn in Western Victoria, leaving little water around for field work. Even projects on intermittent streams have had people praying for rain - we'll probably get floods now!

by

Belinda Robson

FRESHWATER GROUP AT THE SCHOOL OF ZOOLOGY, UNIVERSITY OF TASMANIA

Our contributions to ASL newsletters have been quiet because we have been busy collecting data. Over the last few months, 4 Honours students have completed their projects: **Derek Turnbull** found that *Eusthenia* is not quite as dumb as we thought, **Mark Risdon** had fun checking out the sediments upstream and downstream of forestry road crossings in the damp south-east of the State, **Abby Foley** rapidly assessed urban streams around Hobart, and **Lee Miles** had fun trying to work out where trout move to when no-one's watching. **Derek** enjoyed himself so much that he has started a Ph.D. with **Leon Barmuta** and **Peter Davies** examining the effects of sediment on movements and behaviour of benthic beasties, while **Lee** also found Honours such scream that he's jumped into a Ph.D. as well, but on more trouty things with **Robert White**. Meanwhile incumbent Ph.D. candidates, **Dan Warfe**, **Will Elvey** and **Adam Uytendaal** are variously scratching their heads about the results they have got so far, while their supervisor tries to encourage them with comments like "gee, that's unexpected", "you'll have fun explaining that", "nobody's found that before" or (worst of the lot) "mmm... interesting". But (semi) seriously:

Adam Uytendaal is halfway through his PhD looking at water clarity in shallow lakes on the central plateau which means he spends a lot of time at the IFC hostel at Liawenee, the coldest place in the country. When the temperature soars up to 8 degrees he can be found paddling round Shannon, Penstock and Little Pine lagoons deploying sediment traps and trying to figure out how he's going to model wind resuspension.

Will Elvey is still trekking around streams up in the northeast collecting surber samples, drift samples, sweepnet samples, as well as a bit of night sampling, which means he's got about sixteen years of bug-picking to look forward to. This is to fill up time while he waits for his stream channels to colonise so he can really start playing with trout and their impact on macroinvertebrate communities. **Danielle Warfe** is also halfway through her PhD trying to get a handle on habitat complexity and multiple predators and is sort of stuck at the moment. **Peter Davies** is mourning the imminent loss of his favourite pasta restaurant. The search is on in earnest for a replacement lunching spot.

Taxonomy, however, looks to be the go: **Brita Hansen** continues her revision of the charming burrowing crayfish that used to be called Parastacoides. She and **Alastair Richardson** are hunting for a new name for this beast, and any imaginative (but printable!) suggestions are welcome.

Over summer **Peter Davies** took a team helicoptering up around Cradle Mountain to sample lake outflows (well that's the excuse anyway). The sampling crew included **Laurie Cook, Colin Shepard, Henry Maxwell, Will Elvey, Claire McKenny, Richard Holmes, Mike Dreissen**, and **Abby Foley** (and neither of your correspondents!). **Laurie** insists that outflows can easily be mistaken for inflows, as **Colin** and **Henry** found out once they were dropped off and had to trek all the way round to the other side. There's also a new crop of Honours students who are settling into their projects, while **Julian Harrington** has nearly completed his investigations of what a species of *Notalina* likes in its choice of macrophytes. It looks like **Adam Jagla** will be trying to find the reasons behind some very strange patterns in Hobart invertebrate distributions uncovered **by Abby Foley** last year, while **Rodney Walker** (supervised by **Peter Davies**) looks at barriers to fish dispersal and **Cameron Amos** (supervised by **Robert White**) chases baby trout or something. Stay tuned for sizzling results.

by

Dan Warfe and **Leon Barmuta**

Department of Natural Resources - Biological Monitoring Team - Queensland

Life is very hectic here at the moment. We have just begun our post wet season round of FANRH sampling. People are flying away to far off points throughout the state, nets in hand. The only problem is that nobody informed the weather gods that it is now POST wet. They seem to be of the opinion that the wet season should extend a little longer this year. There is nothing quite like huddling under a flapping tarp in the pouring rain, live picking by the side of a stream. As I write **Sandra Grinter** is in the Bundaberg district, **Chris Marshall** in the Ayr district driving huge distances and back and **Diane Conrick** in the Toowoomba district. I'm off to Marceba district and the Cape next week. **Chris Thomson** will be cutting his sampling teeth on the Brisbane district if the gods reset their clock soon.

On the home front **Glenn McGregor** recently ran a popular blue green algae workshop for local cyanophiles. **Glenn, Chris M** and I presented papers at a Mary River Research Forum. Following his talk on the use of frog fauna for assessing catchment health, **Chris** has become a media star. He now wears a false beard whenever in Gympie so he is not recognised and mobbed by his many adoring fans.

by

Jon Marshall

ENVIRONMENTAL PROTECTION AGENCY - QUEENSLAND

WREP FOR WIPDIP

Hi all. Just thought I'd introduce our team to other ALS'ers.

The Queensland Government set up a Task Force in 1996 to identify and prioritise potential water infrastructure planning and development projects to 'support economic development'. After due consideration the Queensland Government endorsed the 'Water Infrastructure Planning and Development Information Plan' (WIPDIP) for which the Department of Natural Resources (DNR) has responsibility.

To provide greater planning certainty and assist a more regional and cumulative approach to decision making, *i.e.* strategic assessments, the Environmental Protection Agency (EPA) has entered into a service agreement with DNR to provide information about environmental, conservation and cultural resources of relevance to water infrastructure planning and decisions about development and associated land uses.

EPA's environmental planning tasks include :

- developing a classification system defining the quality of the aquatic and riparian assets;
- developing criteria for defining the sustainability (including limits of acceptable change) of aquatic and terrestrial systems impacted by development proposals;
- assessing the effectiveness of methods of mitigating the impacts of water infrastructure and associated developments, activities and operations; and
- developing techniques and strategies which could be used to compensate for unavoidable impacts.

Our team includes aquatic and terrestrial ecologists, GIS analyst, cultural heritage experts, conservation planners and admin support. In future newsletters I will include more details of the actual projects.

As this is rather a challenging project we are keen to foster communications with others who have preceded or are progressing down similar paths. Please contact me if you would like further information, can contribute or would like to share your experiences.

by

Ngaire Phillips
(email Ngaire.Phillips@env.qld.gov.au; phone 07 3225 1740)

AUSTRALIAN WATER QUALITY CENTRE - SA

The Australian Water Quality Centre stream ecology unit is flat out. Old projects continue and we win a few new ones as well. The major monitoring project for the Onkaparinga River Catchment Board involves seasonal samples at thirty sites including Maslins Beach and the Southern Vales winery areas. Hard work but someone has to do it.

Paul, **Peter** and **Chris** have been preparing a report on the biodiversity, ecosystem health, water quality and environmental flows of the Onkaparinga region for the Catchment Board.

Paul needs to shake off his computer nerd status and re-familiarise himself with how to drive a microscope in order to identify all those worms.

MRH is discovering the joys & pain of a Mediterranean climate. It has been a very dry beginning to 1999 and finding water for the Autumn sampling has been quite a challenge. The role of agriculture, and vineyards in particular, in reducing stream flows is presently in the spotlight. Special attention is being payed to the River Marne catchment, which drains the eastern Mt Lofty Ranges to the Murray.

Rob Walsh has taken to spending his weekends at work to complete those Tasmanian Microfauna papers. **Sam Wade** can only spare us two days from his golfing.

Vlad's has given up on the ordinary gear and purchased the heavy duty Hornes Big Black Waders. At 185 cm he is a sight to frighten even big children.

by

Pacdro (Peter Schultz)

DEPARTMENT OF LAND AND WATER CONSERVATION - NSW

The restructure of the DLWCs' Centre for Natural Resources has resulted in a new Biodiversity and Conservation Unit located in Armidale which brings together ecologists of aquatic, terrestrial and even wetlands persuasion. The unit consists of **Eddie Harris** (the illustrious leader), aquatic ecologists **Doug Westhorpe**, **Meredith Royal**, **Nirvana Searle**, **Peter Serov**, **Irene Jarosinski** (all previously in the aquatic ecosystems section at Parramatta), **Bronwyn Jones** (Central West Region), and **Jamie Foster** (Barwon Region), wetlands ecologists **Ken Harris** (Murray Region), **Michael Healy** (Charles Sturt Uni), and **Margaret Brock** (UNE) and terrestrial **ecologists Chris Nadolny** (North Coast Region), **Brian Wilson** (University of Redding, UK) and **Warren Martin** (Central West).

The new B&CU lab and offices are being fitted out at present and in the interim the unit is living in the less than palatial surrounds of the old commonwealth bank building at UNE. All have been busy with water and vegetation reform work and answering the questions of just how the tea club should work and where to buy thermals.

On the Parramatta office scene, **Bruce Chessman**, now the Principal Aquatic Ecologist, has been extremely busy preparing the methods documents for IMEF and coordinating the Pressure, Biota, Habitat (PBH) pilot studies. **Bruce** recently escaped his PC and went sampling for the Snowy Mountains Benchmarking study. **Firoza Azim**, **Cherie Partlett**, **Frances Laurenson** continue the bug identification, data analysis and report writing for Central and North-West Biological Monitoring, FNARH, and Cooback Creek Baseline Biomonitoring. **Cherie** now spends most of her time on the Blue Mountains Bioindicators Study.

Monika Muschal is flying the CNR flag in Newcastle, after moving there recently as part of the CNR restructure. **Monika** has been working on developing an Ecological Risk Assessment model to assess the environmental effects of pesticides in the northern inland catchments of NSW. In addition she continues to manage and report on a large scale surface water quality monitoring program conducted in this region of NSW.

Helen Daly has been busy in a managerial role during the DLWC restructure and has continued her involvement in state-wide and MDBC surface water quality monitoring programs. **Lee Bowling** recently returned from seven weeks in Xinjiang, People's Republic of China, where he was involved in a project on the integrated environmental management of Bosten Lake and the Tarim River being undertaken on behalf of the World Bank. **Lee** along with **Zenita Acaba**, **Hugh Jones** and **Lloyd Flack** have recently released a report on nutrient loads and sources in the Thredbo River, and **Lee** is writing it up as a journal article. **Beth Overton** fulfils the position of Environmental Microbiologist while **Ros Deal** is on maternity leave. **Beth** will be continuing with a joint Macquarie Uni/DLWC investigation into microbial diversity and river health. **Sarah Rish** has replaced **Russell Preece** while he is on a year-long overseas sojourn. **Sarah** is continuing with water quality modelling work on thermal regimes in flow-regulated rivers.

In the Barwon Region, the Riverine Assessment Unit, led by **Neal Foster**, has been very busy with a range of water quality and ecological monitoring projects. Water quality officers **Sue Powell**, **Warwick Mawhinney**, and **Tracy Fulford** have caught their breaths' after the hectic summer sampling period and continued work on the Central and North-West Regions Water Quality Programs, FNARH, IMEF, Rivers Bacteriological Monitoring, and the Stressed Rivers projects. Aquatic Ecologist **David Hohnberg** has been working on the Namoi State of the Rivers draft report, and site selection for the IMEF studies in the Namoi and Gwydir catchments. **David** has also been in the field sampling macroinvertebrates for FNARH and macrophytes for the Pindari

Dam Enlargement Biomonitoring study. In his spare time **David** is supposed to be writing a paper on his Masters research, (on the toxicity of the herbicide atrazine to *Vallisneria gigantea*), and planning his PhD. Hydrologist **Simon Morton** has been hammered with work for the volumetric conversion component of the Stressed Rivers Project.

In the Far West Region, **Amanda Gordon** and **Liz Gardiner** are involved in a number of projects. The Barwon-Darling Riverwatch Program - a blue-green algae monitoring program along the Barwon and Darling Rivers (Mungindi to Menindee). The Intersecting Streams Water Quality Monitoring Program involves monthly water quality monitoring of the ephemeral streams which flow into the Barwon and Darling. The implementation of the IMEF Program along the Barwon-Darling River and FNARH also keep **Amanda** and **Liz** busy. **Don Reid** has been busy with the blue-green algae monitoring in the lower Darling and lower Murray. Now that the rush of summer sampling is over **Don** is preparing a review of the water quality monitoring in the Menindee lakes storage.

The Hunter Resource Assessment Section, lead by **Allan Raine**, has been busy working on a number of water quality and riverine assessment projects. **Estelle Avery** and **Allan Raine** are in the midsts of finalising IMEF studies. **Simon Catzikiris** is out sampling bugs to test temperature impacts from Glenbawn Dam. **Estelle Avery** has continued the diatom study for IMEF. **Sandra Mitchell** is completing the final Stressed Streams drafts and developing protocols for use of the Environmental Contingency Allowance. **Graham Carter** has been sampling water quality, bacteria, and riparian condition in the Wallis Lake catchment.

In the Murray Region, Rivercare Officers **Claire Purtle** and **Jenny Lander** provide advice on riverine & wetland management. Water Quality Officers **Kate Browning** and **Peter Huhta** have been busy sampling for the Water Reforms projects. **Kate** is also working on the Edward River and Billabong Creek projects, Keysites, as part of the state-wide program, bacterial sites at recreation points, and blue-green algae monitoring. **Peter** spends much of his time working on the stressed rivers project. **Damien Green**, Edward/Wakool Flow Assessment Officer, is working on determining the impacts of river regulation on aquatic ecosystems in the Edward/Wakool System. **Helen Glazebrook**, Flow Planning Officer for Forest Creek, is working on developing a management plan for Forest Creek in conjunction with landholders and interested stakeholders.

In the Murrumbidgee Region, **Alastair Buchan**, **Lorraine Hardwick**, **James Maguire**, **Helen Keenan**, **Robert Cawley** and **Stuart Pengelly** have been working hard on the Integrated Monitoring of Environmental Flows (IMEF) project and testing of Pressure Biota Habitat (PBR) methods for application in unregulated rivers for formulation of water extraction licensing conditions. On the local level, **Stuart Pengelly** is working on an algal management strategy for the region which includes conversion of scientific principles to "best practice" for targeted algal affected water bodies. **Helen Keenan** is working on developing decision support models for the storages and weirs operating protocols project.

In the North Coast Region, Water Quality Planners **Simon Mitrovic** (Alstonville) and **Jennie Fenton** (Grafton) have been getting background and support information together for the Water Management Committees, coordinating stakeholders in their current water quality data collection, and trying to finish a heap of loose ends like State of the Rivers and Estuaries reports. The North Coast Regions' Aquatic Ecosystems Resource Officers are **Nigel Blake** (Grafton), **Geoff McDonald** (Coffs Harbour), **Tracey Chambers** (Alstonville), **Pat Pahlow** (Murwillumbah), and **Greg Robinson** (Kempsey). The AER Officers are involved in the Aquatic Ecosystems program, which is part NHT funded for three years, water quality and ecosystem health monitoring, for example Stressed Rivers, wetlands, and education.

Sydney South Coast, and Central West Regions are so flat out with work they did not have time to let us know what they are doing.

by

David Hohnberg

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UNIVERSITY OF ARMIDALE - NSW

Big news - the Book is nigh! As I type this, the final changes are to be made this weekend, and it hits the printers on the 1st of June for release in mid-July. **Bill Williams** and **Gleneagles** are doing the Honours, and I shall give more details when we have the hard version in our hot sweaty hands! A huge thanks to all ASLers who contributed boxes - we now brace ourselves for the hail of abuse and omissions...

With all this, action has been gradual on the UNE front. **Andrew Boulton** is preparing for fieldwork in the Never Never River after 3 months of exceptional rain delayed access to the hyporheic zone. He will also be doing similar studies in September in the hyporheic zones of sections of the Hunter River with funding from DLWC. **Sue Botting** is deep into her bugs from the Macleay River while **Colleen Watts** prepares some more papers and sections of thesis for the postgrad workshop at UNE in late June. **Kim Jenkins** is soon to leave for New Zealand and still has a bargain price for 300 icecream containers. **Rob Woods** recently presented his results on research on blue-green algal blooms in Armidale's water supply to the Council who were impressed by his work. **Sandra Grinter**, escaping the Tablelands cold, still yearns for the bracing air and came up a few weeks ago to report on progress and acclimatise to the impending chills. Hons projects continue - one I forgot in the last newsletter is by **Rachael Kellett** with DLWC looking at leaf and wood litter transport at several sites along the Namoi as part of the IMEF project.

by

Andrew Boulton

CENTRE FOR CATCHMENT AND IN-STREAM RESEARCH, GRIFFITH UNIVERSITY, BRISBANE

Angela Arthington, Brad Pusey and **Mark Kennard** recently completed their LWRRDC project: Ecological basis for river habitat & in-stream flow. From this work they intend to publish two manuals : 1. Environmental Flow Management in Australian Landscapes. 2. Biological & Environmental Flow Requirements of the Freshwater Fishes of Queensland. **Angela** and **Mark** recently participated in an in-stream flow assessment on a series of water infrastructure developments, Lesotho, Southern Africa. **Angela** and **Brad** along with **Sandra Brizga** are currently working on a benchmarking project funded by Department of Natural Resources to establish the impact of dams in Qld rivers. **Angela** is completing an AQUISS funded project, assessing the probability of the establishment of exotic ornamental aquatic species in Australia.

Steve Mackay recently presented a paper on Mary River Macrophytes at a recent Mary River Catchment Co-ordinating Committee forum. Other CCISR members to present past work at the forum included **Angela, Mark, Thorsten Mosich,** and **Stuart Bunn**. **Steve** is presently compiling a list of wetland plant species and their association with different types of wetlands. The list is to be used by Brisbane City Council, as a management tool to assist in the classification of wetland types according to the plant species present.

Stuart attended a SCOWA (Scientific Committee for Water Research) meeting in Paris. He presented an Australian perspective to the meeting on the Ecological Consequences of Altered Hydrological Regimes. Otherwise he has been busy with CRC rebid commitments and as a member of the Fitzroy Advisory Panel reviewing the Fitzroy River Water Action Management Plan. **Michelle Winning** had a recent sampling trip to Kakadu as part of an on-going project with **Stuart, Peter Davies** and **Michael Douglas** assessing the effects of Para grass consumption on aquatic food webs.

James Udy presented a paper on Nitrogen limitation and cycling in N.E. Australian streams at the NABS conference in Duluth, Minnesota. He managed to fit this in between his many skiing and canoeing commitments throughout Norway, Sweden, Canada and the U.S.. **Thorsten Mosich** is also having some R&R in Germany following his Lake 99 conference in Denmark where he presented a paper on The effects of power boating on the water quality of an Island Dune Lake. Following the conference he also attended a Lake Ecosystem Modelling course.

Wade Hadwen has just completed the first sampling trip of his PhD study to assess the effects of human sourced nutrient inputs on ecosystem processes in Fraser Island Lakes. Meanwhile **Fiona Balcombe, Romeny Lynch,** and **Peter Negus** push towards PhD completion, as **Stuart** grapples with the task of moving them to his out-tray.

by

Stephen Balcombe

THE CENTRE FOR TROPICAL WETLANDS MANAGEMENT, NORTHERN TERRITORY UNIVERSITY

The big news from the Uni is that **Michael Douglas** has submitted his PhD thesis on seasonal patterns in intermittent streams and the effects of fire on these ecosystems (Oh my god, I think the world is about to end – ED). The delivery took place just before Easter after a.... well... lengthy gestation period and with at least minutes to spare before the penultimate deadline. Congratulations are also due to **Michael Welch** who received 1st class Honours for his work on colonisation of natural and artificial stream stones.

The para grass project continues through its cycles of field and lab work. In April all the collaborators got together to conduct a workshop in Jabiru to present our preliminary results to a range of stakeholders. **Peter Davies** and **Michelle Winning** (in her **Stuart Bunn** mask) presented their metabolism and isotope results – an unenviable task given the broad range of people in the audience. **Bob Pigeon** talked about fish and the joys of sampling in heavily vegetated, crocodile infested waters. **Piers Barrow** from Parks Australia North talked about the problems associated with the control of para grass and initial findings about herbicide application rates and the NTU crowd talked about invertebrates and vegetation. One of the issues that has arisen from the preliminary work relates to the fate of para grass on the floodplain. It doesn't seem to be entering the food webs and the concern is it may be accumulating to provide an increased fuel load for fires. Plans are afoot, therefore, to measure decomposition rates. Initial findings are that the sweet hay-like smell of large quantities of cooking para grass is a good way to get noticed but not make friends with colleagues.

by

Ruth O'Connor

UNIVERSITY OF ADELAIDE, DEPARTMENT OF ENVIRONMENTAL BIOLOGY, BENHAM BUILDING -SA

It has been some time since our last contribution, time enough for three magnificent batches of Honours students. The first lot was a tasty mixture comprising **David Cenzato, Mark Siebentritt** and **Amy Slocombe**. They were all working on macrophytes and all gained 1st Class Honours. **David's** thesis *Canopy architecture and growth of Potamogeton ochreatus and Potamogeton tricarinatus in response to varying average irradiance*, was conducted in the famous Ganf Ponds and at the world's largest constructed wetland, Barker Inlet. **Amy's** thesis, *An investigation into the seed bank and vegetation dynamics of a cattle-degraded wetland, Gordon Lagoon, South Australia*, comments on the tolerance of wetland seedbanks to long-term disturbance. **Mark** finished his thesis, *An investigation into the zonation of Bolboshoenus medianus and Bolboshoenus caldwellii* , and a stint at Morree, NSW, working for Wetland Care Australia and is still with us - silly boy!. He has just started a PhD looking at turbidity effects on macrophyte distribution in Bookmark Biosphere, River Murray and we wish him every success.

The second batch of Honours students are just going into the oven - 4 weeks to go! **Christian Hodgson**, took on cyanobacteria in the River Torrens with able assistance from **Leon Linden** (summer scholar). This problem has received great publicity after last summer's toxic blooms and even **George Ganf** was seen in the lab (and on TV!) enthusiastically counting cells. **Michael Manou** and **Jason Nicol** had major hassles accurately controlling water regime fluctuations in the Ganf Ponds, even with the whole of the Engineering Department designing and redesigning the computer system. **Michael** was looking at the effects of varying water regime on Phragmites australis and Eleocharis sphacelata and is so organised that he will probably finish early - unheard of!! **Jason** has compared the responses of seedbanks from the various basins of Bool Lagoon to differing water regimes. He has meddled in the magic of PATN and has suprised himself with the significance of his results.

And the third batch are still a list of ingredients. They are **Shaun Kennedy, Ben Knights** and **Nelda Sale**. They are all co-supervised by **Keith Walker** and **George**. **Sean** is investigating the effect of salt on willow seedling survivorship. **Ben** is investigating the effect of water regime on macrophyte distribution in the River Torrens and **Nelda** is now working on germination responses of various macrophytes after the cold weather has terminated her rhizome recruitment experiments.

As for the rest of the PhDs, **Sean White** is about to hand in his thesis on the ecological significance of convective flow in Typha and Phragmites and has his mind set on Japanese forays. **Kerri Muller** can see the light at the end of the tunnel and it is in the form of a big Woodward-Clyde sign, yes, she has crossed into the private sector. **Karen Westwood** had a successful run with cyanobacteria in the River Murray and is taking an 8 week venture to Antarctica for ice-skating lessons (and to count algae, for something new). **Rudi Regel** has just rejoined the ranks to start a PhD on the effect of light fluctuations on cyanobacterial growth in reservoirs with **Justin Brookes** and **George** as co-supervisors under CRCWQT. And **Michelle Bald** will be back in a few weeks to recommence her work on nutrient accumulation in macrophytes bathed in sewage.

George undoubtedly needs a holiday from all this and is off to France, au revoir!!!

By

Fran Sheldon

University of Adelaide, Department of Environmental Biology, The Fisher Building

Well, anyone who is an ardent follower of Prattlebut will have noticed a name change for the old Departments of Botany and Zoology at the University of Adelaide - we have now merged and call ourselves Environmental Biology. In the next two years we will all mix and match and move buildings but until then most of the old-bots remain in the Benham and most of the old-zoos in the Fisher.

As with the Benham building there have been a large number of Honours batches pass through the Fisher building. **Rachael Skinner** flooded sediments with different levels of salty water to see what emerged. **Jo Thyer** investigated the biology of the apparently indestructible *Potamopyrgus* while **Ben Smith** looked at population dynamics of carp. **Amy Blaylock** undertook at study of the Sturt River and **Nigel Rudge** a study of Brownhill Ck and the Field River - all urban streams around the Adelaide region. Just commenced are the three students outlined above co-supervised by Keith and George. Also, **Ben Goode** looking at the impacts of chlorinated water transfers in the River Torrens catchment and **Amber Lang** conducting a study of the Onkaparinga River.

Jim Puckridge has notified his 'Intention to Submit' so the monograph of fish biology for the Coongie Lakes region is near completion - this will be one well-earned PhD. The DRY/WET project involving **Jim, Justin Costelloe** (formerly Uni of Melbourne) and **Keith Walker**, funded under the National Wetlands R&D Program, has been completed but they are still selling the products - for more information contact **Jim** at jpuckrid@zoology.adelaide.edu.au. **Sue Graham** continues her PhD work on the ecology of mound springs and the impacts of water abstraction. She has just spent a very cosy week in a remote hut near Roxby Downs with some Western Mining Security Guards … say no more.

Fran Sheldon and **Martin Thoms** (CRCFE -Uni of Canberra) are in the final throws of completing the LWRRDC funded Barwon-Darling Environmental Flows project. **Fran** is about to commence an ARC-SPIRT Post-doc looking at habitat fragmentation and water resource development in the Condamine-Balonne system (northern Murray-Darling Basin).

Keith Walker is again in Thailand working for Monash International, sampling the Thai food and culture and occasionally enjoying visits to things aquatic. When in Australia he is as busy as ever with teaching, plagues of students and things of a Murray nature. **Bill Williams** still maintains links with the University and is occasionally seen around the building when he is not jetsetting in his role as Coordinator of the National Wetlands R&D Program and as a consultant extraordinaire.

By

Kerri Muller, Rudi Regel and Karen Westwood

FRESHWATER SCIENCES, EPA VICTORIA

Much of the work going on here at EPA has been in train for sometime (I'm not complaining, we are grateful for long term employment!) but the highlight in recent months is the acceptance by government and publication of the State Environment Protection Policy covering the streams in the Yarra catchment. This, for the first time, sets into government policy numeric ecological objectives instead of just relying on water quality objectives. This work was done by **Julia Reed** in her time with us (now at NRE) several years ago and was ably assisted by **David Tiller** and others. More on ecological objectives later.

Ros St Clair and **John Dean** continue to delve into the mysteries and delights of caddis and mayfly taxonomy. **Ros** has a new love - Kokiriidae - lovely little beasts with fore and mid-legs developed for grasping. **John** has also begun the large task of archiving the material collected under the National River Health Program for storage in the Museum of Victoria.

The surbers collected from the upper Taggerty system by **Jan Barton** and **Ros** have finally been all processed and the analyses commenced assessing temporal variation and the impact of rotenone on small upland streams. **Jan** is hopeful of completing these later this year. **Jan, Nina Bate** and **David T** are continuing to process and analyse their estuary data and intend presenting a paper on their preliminary findings at the AMSA conference later this year.

Nina, at the instigation of **Peter Newall**, has been doing the preliminary processing of hundreds of diatom samples collected at sites sampled for bugs under the NRHP. The final identifications are being carried out at the Uni of Adelaide and will eventually result of in a data set of benthic diatoms from several hundred sites across Victoria. **Peter** has successfully produced his first offspring, the proceedings of the first national diatom workshop, is continuing to work with others (eg **Gell, Sonneman** etc) to get a standard approach to diatom sampling and an iconograph (pretty pictures on the web? - hasn't the Fed. Govt. just banned that?). **Peter** and **David T** have also commenced work on a second iteration of their nutrient guidelines.

Fiona Wells (currently on a months holiday in Thailand) with **Peter** and **Leon** continues to work on defining ecoregions for the state with a view to developing ecological objectives for incorporation into EPA policy. So far the results are very encouraging and we have developed AusRivAS style models for two regions as well as assessing other indicators such as SIGNAL, Key Families and EPTs. **Rebecca Hewlett** is well into her Masters examining the influence of taxonomic resolution on statewide classifications using macroinvertebrates. She is also investigating the influence of taxonomy at smaller spatial scales. As part of the same CRC project **Leon** has also been building AusRivAS models at genus and species levels to compare with the existing family level models.

David Robinson, Stephen Perriss and **Leon** have revisited some of their old favourite sites as part of a CRC funded program looking at longterm variability in stream bugs. **Dave R** is also completing his work on the review of the state water quality monitoring network, including an audit protocol, is in the process of statistically analysing the spatial variability of water samples collected at different locations within a site and, with the help of **David T**, has spent 5 days sampling one site on the lower Latrobe River in order to assess temporal variability of water quality data. He's also renovated 2 houses.

Jessica Miller and **Leon** have completed their work on the influence of sample size on the types of samples collected under the NRHP. Fortunately, the standard sized samples are plenty big enough in most habitats. The largest program is still the Commonwealth's monitoring program although we

have moved on in acronyms - it's now the Australia-wide Assessment of River Health - perhaps a more appropriate sounding acronym. We all get to work on this, including **Tim Bessell-Browne** and **Felicity Smith** (temporarily at least). We are once again sampling about 220 sites this year with the program due for completion at the end of 2000. Then we can begin to contemplate life beyond NRHP/MRHI/FNARH/AARH.

By

Leon Metzeling

Minutes of ASL executive teleconference, 25 March 1999

Present: P.Horwitz, J.Chambers, R.Marchant, D. Nias, K.Muller, R. O'Connor, M.Hart, R. Butcher

Apologies: G. Jones, M. Finlayson, J. Jackson

1. State chapters: In Vic R. Butcher and R. StClair have arranged for a number of talks to be given throughout the year (programme in last newsletter). These will cover a broad range of topics. In SA K.Muller and F. Sheldon are organising a student conference (possibly for the semester break) in which students will talk about the direction of their research. In WA a wetland symposium is planned but details still have to be worked out by P.Horwitz and J.Chambers. In the NT the low number of members make any sort of state based meeting difficult. R. O'Connor will determine whether there is sufficient support for a meeting.

2. Funding requests: Written guidelines and a tentative budget are needed as the society is receiving more requests each year. J.Chambers, D.Nias and P.Horwitz will put together some guidelines.

3. ASL medal report: No nominations have been received by P.Horwitz since the last AGM. It was suggested that a call for nominations should be published in every newsletter. P.Horwitz will contact I.Growns about this.

4. Process for dealing with name change: A sub-committee consisting of J.Chambers (chair), K.Muller and J.Davis will implement the process suggested by P.Horwitz.: subcommittee will assemble existing comments from listserver; subcommittee will solicit a statement FOR, and a statement AGAINST name change; statements will be posted on the listserver; members will be asked to vote FOR or AGAINST; subcommittee will prepare a report with recommendations; recommendations plus Vote results will be taken to AGM in NZ for discussion and decision.

5. Secretariat: A funded secretariat could be established by collaborating with another society, e.g. AMSA, or by seeking funding, e.g from National Heritage Trust. Before embarking on this an assessment of the society's needs is required. R.Marchant and D. Nias will put together some thoughts which will be sent to P.Horwitz.

6.Futures document: As a first step in fulfilling recommendations of this document a policy committee needs to be established whose first task is to draw up terms of reference. After some discussion it was decided that the policy committee should consist of: the President (or nominee), the immediate past-President, one member of the existing executive (D.Nias) and two members of the society. Members will be asked via the listserver to express interest and some of these will then be directly invited onto the committee. This will happen within the next month. The term of the policy subcommittee will coincide with that of the executive.

7. Policy documents: The latest documents have not been distributed. P.Horwitz will send a covering letter to M.Hart who has the brochures. She will then send 100 copies to the NSW and Victorian executive members and 50 to each of the executive members from the other states. Brochures will be sent to key people only within each state; blanket coverage will not be attempted.

8. Finance: The society has $19000 and $18000 in two term deposits with the National Australia bank; $21767 in an investment account with the ANZ; and $6400 in a current account with the NAB. M.Hart indicated that the society's reserves in the last two years had been dropping.

9. ISP: Setting up a new web site will cost $60 plus $350 per annum according to Simon Josey (ASL web site manager in Canberra). The executive agreed to proceed with this.

10. Executive term: In the futures document a two year term was suggested. This will be voted on at the next AGM.

11. Wetland lecture: It was agreed that no lecture would be given this year but it would be given next year at the meeting in the NT.

FASTS CIRCULAR FOR MARCH

1. SCIENCE AND PARLIAMENT

The policy debate rages in Canberra, and there is a whole raft of issues where impending announcements will have major implications for the way science and technology conducts its business in Australia.

The opinion of FASTS is increasingly sought. Part of this stems from our membership of the Prime Minister's Science Council (PMSEIC), which brings me into regular contact with Ministers covering portfolios ranging from Health to Education and the Environment.

As well as formal contact with PMSEIC and groups like the Government Committee on Science and Industry chaired by Senator Grant Chapman, I am sounded out and asked informally to suggest names for key appointments.

Minister Minchin recently invited a small group to dinner at Parliament House to discuss science issues and priorities, and it is useful on these occasions to inject information from the grass-roots science and technology community.

The matters on which we are asked to comment are becoming increasingly technical, with capital gains tax and the future of the tax concession to industry for R&D two examples of issues with a maze of unintended consequences and side effects.

Both are two key issues for the science and technology community, and both should be seen in the context of clear political signals that neither major party is convinced that money going to R&D is an investment in Australia's future rather than a drain on the public purse.

Both parties are waiting for industry to make up the shortfall by increasing its investment in research.

This is despite examples from the US, the UK and Japan. These countries have seen where the future lies and massively increased their public investment in research. The Wills Review on medical research has endorsed these views and I hope the Government adopts the major recommendations of the Report.

The temptation for Parliamentarians faced with making decisions in these areas against a backdrop clamour of competing causes is to look for the short-term solutions. But anyone involved in research knows it can take 15 years from clever idea to marketable product.

Science is not well served in Australia by the fact that only 11 of the 224 MHRs and Senators have formal qualifications in science. Another 5 have engineering degrees, and 13 have qualifications in health care. (Source: Australian Parliamentary Library)

Parliamentarians are not unsympathetic to S&T, but the imperatives of a 3 year Parliamentary term and dealing with a bewildering array of issues are powerful incentives to seek quick and simple answers. What Australia really needs is a considered blueprint for the future.

2. GREEN PAPER ON RESEARCH AND RESEARCH TRAINING

The release of this paper by Minister Kemp is imminent. He is expected to allow three months for comment and response, in order to get comprehensive feedback, and in contrast to the botched and secretive release of earlier plans to change the system.

FASTS is planning a symposium to discuss the Paper, and allow people from industry and research to exchange views and hear different perspectives before the time for formal responses has closed.

3. NEW CHIEF SCIENTIST EXPECTED SOON

The announcement of a new Chief Scientist is imminent. The scientific and technological community is watching with interest to see who will pick up the baton from John Stocker.

Stocker is a hard act to follow. One of the bright spots on the science horizon has been the significant rise in prestige and performance of the Prime Minister's Science Council, and I hope the new appointee will be able to match Stocker's astute management of the Council.

4. THE BIOTECHNOLOGY PAPER

The FASTS' Occasional Paper on Biotechnology by Board Member Peter French has sparked interest in business and political circles. It outlines the possibilities open to Australia if industry, government and researchers act together; and gives a realistic assessment of where our international competition lies.

The paper has been widely circulated, and demand from Parliamentary Committees and industry groups has forced a third printing.

5. REVISIONS IN THE WINGS

FASTS will release a revised version of its policy document in November this year. All Member Societies have been invited to nominate changes and additions to the document.

Chair of Policy Committee Ken Baldwin has convened a Committee meeting for April 30, and is interested in hearing ideas and comments. His email address is: Kenneth.Baldwin@anu.edu.au

One new issue is the increasing difficulty of arranging scientific exchanges, particularly at the postdoctoral level because of immigration policies in Australia and overseas. Until recently, postdoctoral study overseas was the norm for Australian Ph.D. graduates. Australian laboratories derived substantial benefit from foreign researchers at this level. But many opportunities to fund international exchange visits by scientists are being lost as government policies increasingly favour the appointment of locally qualified people.

Postdoctoral training in Europe is almost prohibited except where individuals have European passports or work permits. Should we be arguing for open borders, or is overseas training and experience no longer important for the next generation of Australian scientists?

6. NEW FASTS' BROCHURE

FASTS wants more members! Fifty thousand scientists and technologists belong to the Learned Societies that make up the membership of FASTS, but many other Societies could join. A brochure explaining the benefits of membership is available from the FASTS' office.

7. RESPONSE TO WILLS REVIEW

FASTS' response to Wills Review on medical research generally applauded its recommendations, but urged a strengthening and increased funding for the NH&MRC; and also improved infrastructure in universities through full implementation of the Boston Review.

Thanks to Board Member David Tracey for drafting and ushering through the process of consultation.

8. NEW OCEANS POLICY

Minister Hill announcement of new funding for Australia's Ocean Territory is welcome, although $50 million of research over three years is not going to discover very much about an ocean area larger than the land mass of Australia.

The first meeting of the National Oceans Ministerial Board is expected before the end of April and will select a National Oceans Advisory Group. NOAG will provide technical advice, and marine and geological interests with close links to FASTS should be represented on NOAG.

9. COMMERCIALISING SCIENCE

The FASTS' report on the barriers scientists and technologists face in commercialising their science has turned up a whole series of recommendations on how things could be improved.

Information was gathered through focus groups involving 120 scientists across Australia. It was carried out with the assistance of a grant from the Department of Industry, Science and Resources, and the report is scheduled to be finished in the next few weeks.

10. NATIONAL PRIDE IN SCIENCE

Some may have missed reports earlier this year of an international survey to find what it was that made people proud of their country. The Melbourne Institute of Applied Economic and Social Research study showed Australians ranked science and technology second highest on their list, behind only sport.

This was the second highest ranking for science and technology in the 24 countries, and adds weight to FASTS suggestion to the Government to capture the imagination of all Australians with landmark S&T-based projects to mark the Year 2001.

Peter Cullen
President
12 April 1999

SCIENTISTS BEHAVING COMMERCIALLY

A new report released today (Wednesday) shows that scientists and technologists still have to battle when it comes to commercialising the results of their work.

The report indicates that the innovation process in Australia is at an immature stage, as scientists, industry, research organisations, Government and investors search for the magic formula to generate new industries and jobs out of Australian research.

"Scientists commercialising their research" is published by the Federation of Australian Scientific and Technological Societies (FASTS). Based on discussions with 126 scientists and technologists across Australia, it provides a snapshot picture of the way scientists see the commercialisation process and the obstacles which stand in their way.

Professor Peter Cullen, President of FASTS, said the report shows Australia has a long way to travel if the nation wants to make the best use of its high-quality research.

"It boils down to a change of attitude, a change of culture," he said. "Australians have to learn to be comfortable with the ideas of commercialisation and entrepreneurship, and of some people becoming seriously rich.

Prominent among the discouraging factors identified by participants were:
... timid industry reluctant to invest in Australian ideas
... lack of recognition within research organisations for commercially-orientated work
... colleagues who looked down on commercial work as second-rate
... lack of good advice on how to commercialise work
... capital gains tax (CGT)

Some confessed to becoming so weary with battling against the odds that they walked away from trying to commercialise promising new ideas, in order to concentrate on the traditional means of achieving a successful academic career through publishing papers.

"But there are also promising signs to show that things are changing," Professor Cullen said. "There was widespread recognition that the Cooperative Research Centres are bridging the gap between research and industry."

The report also identified possible solutions. These included developing a long term strategy to change cultural attitudes in Australia, to foster acceptance and support for research-driven, high technology industries as creators of wealth and jobs

Professor Cullen said that Government can do only so much to bring about the changes.

"There are lessons for everyone - industry, research organisations, the scientific community, potential investors and the community. The Australian community has yet to appreciate the connection between science and technology, and a healthy long-term economy," he said.

The report was written by Executive Director of FASTS Mr Toss Gascoigne and a Brisbane-based consultant Ms Jenni Metcalfe, and part-funded by a grant from the Commonwealth Department of Industry, Science and Resources.

Both an executive summary and the full report are available from FASTS, on (02) 6257 2891

FASTS WELCOMES CHIEF SCIENTIST

Australia's peak council for working scientists and technologists has welcomed the appointment of Dr Robin Batterham as the Chief Scientist of Australia.

Professor Peter Cullen, President of the Federation of Australian Scientific and Technological Societies (FASTS), said he looked forward to working with Dr Batterham on the Prime Minister's Science Council.

"The Chief Scientist plays a pivotal role in bringing a whole-of-Government approach to the funding and application of research for the benefit of Australia," he said.

"Dr Batterham's record in research and industry leave him admirably placed to capitalise on the considerable achievements of his predecessor, Professor John Stocker."

Professor Cullen said growing interest in science and technology by State and Territory Governments opened up intriguing prospects for the Chief Scientist in his dealings with the more innovative States.

"The recent investments by Queensland in biotechnology underline the emerging role for regional government in science. Queensland are picking up initiatives trailblazed by Victoria and West Australia, and some of the other jurisdictions are not far behind," he said.

Professor Cullen said the appointment coincides with a growing awareness of the power of science and technology to generate wealth-creating industries by the Commonwealth Government, although funding for scientific research was yet to match the rhetoric.

"Australian needs, Australian Research"

FASTS is to hold a forum at the National Press Club on July 14, Bastille Day.

The forum will feature as the lunchtime speaker Mr Tim Besley AO, President of the Australian Academy of Technological Sciences and Engineering and Chair of the Commonwealth Bank. His address will be televised live.

The morning session has four prominent speakers, two from research and research administration and two from industry. They will set out their vision for research in Australia, touching on questions such as the level of funding and funding mechanisms.

Speakers will reflect on the proposals raised in the Green Paper on research if the paper has been released by that time. Minister for Education Dr Kemp has been invited to speak at the Form.

You are invited to register for the Forum, and further details will be available shortly.

Toss Gascoigne

A POSTCARD FROM THE FREE MARKET

AN OCCASIONAL SERIES BY TIM DOEG

THE GRAVY TRAIN: ENVIRONMENTAL FLOWS

Without wishing to pre-empt the ASL Top 10 "Issues in Limnology" about to be produced, I think there is one item that will be prominent on the list. Call me Nostradamus if you like (Nah, I'd rather call you Timmy – ED), but I have a sneaking suspicion that Environmental Flows will get a mention. The 80's were the years of Ecologically Sustainable Development; the 90's was the decade of Landcare. I suspect the 00's (what do we call them?) will see the battle for environmental flows change from isolated applications in individual catchments to a broad-scale war.

Driven by the Water Reform Process, the COAG Principles explicitly state that environmental concerns need to be a key consideration in water reform (how did that sneak in there?). So, in the conservation field there is an opportunity to have significant input into rehabilitation of flows in our rivers. To the lone consultant, the bells are ringing, and the next environmental gravy train is about to leave the station.

Better get up to date on the latest environmental flow thinking. Better be prepared when the phone starts ringing from water managers asking for help. Luckily, a set of excellent documents from LWRRDC has just came across my desk. Arising from the project "Comparative Evaluation of Environmental Flow Assessment Techniques" (LWRRDC Occasional Papers 24-28/98), they outline all the current techniques, and suggest "best practice" for environmental flow determinations.

Up to now, the first thing that usually comes to mind when environmental flows are mentioned is the automatic addition of the word "Minimum" to the term, as in "Minimum Environmental Flow". This is, of course, a natural response from a water resource manager, charged with providing water to users with the highest possible security. One would always want to have the minimum amount "wasted" on environmental considerations.

I suspect this derives from the history of water in Australia. Water resources were originally managed for consumption, and it was un-Australian to think otherwise. "Proud Aussies opening the dry interior … the Snowy Mountains Scheme as a source of national pride…. taming the land". All that sort of stuff. And this was reflected in the clear assumption that water was there for the benefit and use of industry.

As such, the ownership of water was handed over to the resource developers. If you wanted water, all you had to do was dam a tributary or stick a pump into the river and take as much as you needed…. or rather, take as much as you wanted, even if it was more than you needed. No one was there to stop you, there were no environmental defenders back then. This of course led to poor, inefficient use of water, and poor quality delivery infrastructure.

At some time in this process, some one quietly mentioned the word "environment". And the heretical idea that, maybe, it would be a good idea to leave some water in the river was born. And

at the time, the obvious solution to the environmental flow question was to determine just how little of the water needed to be left for the environment.

So when the call for environmental water was made, the question answered was "what are the minimum flow requirements for this river". In the bad old days, environmental flow assessments were a bit like Oliver Twist, with the begging bowl in hand … "Please sir, can I have some more?" Not a lot … just a little bit…. if it's not too much trouble … please.

So some of the water was "handed back", grudgingly, and only in some cases, and only as little as possible. In the era of rampant development, any allocation for the environment was seen as a win. So the idea of a Minimum Environmental Flow Determination was born. What is disturbing is that the idea became accepted as standard within the scientific community.

And so comes the first call. The water manager at the other end of the phone is in a dilemma about flows in the XXXX River (the name is blank due to Commercial Confidentiality Clauses). Can I give them a Minimum Environmental Flow Determination for the river?

Aha, the gravy train is here. Says I: "No…. Sorry, current thinking has gone long past the Minimum Flow Determination Concept. We're now into Holistic thinking. Best Practice methods will involve a geomorphologist, hydrologist, vegetation expert, and a fish and bug person. We need to have an 11 stage process, with desktop studies, workshops, detailed research investigations, modelling and field inspections. It should only take 2-5 years."

And the phone goes dead. The train has stalled. The new methods have not been embraced by the water manager. Sure, there are large-scale programs to implement such methodologies, supported and funded at the highest levels of the bureaucracy. However, Joe Average Water Manager can't use them.

It's the timetable and the expense. Best-practice Holistic methods take years to develop, involving a cast of thousands. While fine for new and very large developments with long planning horizons, most of our rivers are suffering the death of a thousand cuts. A new vineyard wants 0.5 Ml/d to grow grapes, a rice grower want an additional 1 Ml/d to plant out another Greenhouse gas generator. And Joe Water Manager has to decide on whether to approve the proposal in the short-term (i.e next week). A suggestion that we need to wait 2-5 years before we can decide will bring a rapid predictable response from the local Member of Parliament, and the Appeals Tribunal (the old attitudes are still out there).

Don't get me wrong. The new techniques are philosophically attractive, technically attractive and environmentally attractive. But they will always operate at the big-end-of-town. The small water authority will never be able to afford the new methods in day to day operations. And the small consultant asked to recommend environmental flows or assist in the assessment of a proposed development will never be able to use them.

So what do we do in the smaller scale, where the old philosophies remain? We need a framework and tools that will allow us to deal with these types of issues, while still embracing the new ideas of a flow regime (not a minimum value) that will protect the myriad components of a river environment that make up the ecology of the system.

We still need to reverse the question from "what is the Minimum Flow Requirements for this river" to "what is the maximum amount of water that can be diverted before the environment suffers." In the first case, the resource is owned by the users and some is given back. In the second case, the resource is owned by the environment and some is generously donated for development. This is a

fundamental philosophy behind the new methods (but written in small print so as not to scare anyone). It's a fundamental change in attitude, but it's an important difference – and it's a difference we all need to embrace.

Primarily, we need to develop rapid, yet defensible, techniques and procedures that allow the determination of whether an individual river is flow stressed from the current diversions. We often seem to be working on the assumption that all rivers are flow stressed and that current use patterns are all too large (the Murray-Darling Syndrome). Probably many smaller systems haven't reached the stressed stage, so the opportunity to use the holistic philosophy at that scale still exists.

If the river is stressed, the proposal can be rejected, or deferred until more detailed studies can be mounted. If it's not stressed, then we need a method to set a cap (yes, a CAP – scary word isn't it) on the amount and timing of flow diversion allowable in smaller systems. If the new diversion pushes the river beyond that cap, it is rejected. If not, then it can proceed.

With these sorts of simple techniques, the incremental losses in the system can be addressed, at the scale of the sub-catchment and reach, and at the scale of the local water manager.

Additionally, what we need is to support agricultural and engineering research into the efficient use of current water supplies. Low-use irrigation techniques, low-loss delivery systems, smart pumps that can measure flow rates in the river and divert accordingly, different weir construction techniques that allow a proportion of water through (transparent weirs). Savings generated through these techniques need then to be fed back into an environmental flow, back towards the nominated cap level. This is fundamental non-limnology research, but I suspect should appear in the Limnology Top 10 issues.

I know these ideas are not new. However, it seems a good idea, at the start of the Decade of Environmental Flows, to reintroduce and reinforce then into the debate. All aboard!

[Note: any dumb views expressed herein are those of the author. Any insult to progressive water managers in unintended … insults to old-school water managers are…. Sorry, word limit is up.]

NATIONAL POSTGRADUATE CONFERENCE IN ECOLOGY, EVOLUTION AND SYSTEMATICS

The Australian National University, Canberra ACT

Thursday - Saturday, January 20-22, 2000

http://www.anu.edu.au/EES_BOZO

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PURPOSE OF THE CONFERENCE

The National Postgraduate Conference in Ecology, Evolution, and Systematics will provide an opportunity for postgraduate and Honours students at any stage in their research to present and discuss their work. Students of any discipline researching aspects of ecology, evolution or systematics are encouraged to attend.

Students will gain valuable experience in presenting scientific research to an audience of peers. The conference has been structured to provide a generous amount of time for informal discussion in order to encourage the development of a network of contacts between graduate students and the sharing of scientific ideas and academic concerns. Those planning to present their work at other conferences will find this an excellent opportunity to practice in a supportive environment.

REGISTRATION

Postgraduate students Early (Payment received before 10 Dec) $25.00
Late $40.00
Honours and undergraduate students $10.00

The registration fee includes a copy of the abstracts, tea and coffee, and meals at the social events.

FINANCIAL ASSISTANCE

There will be ten travel-assistance awards available, each totaling a maximum of $150, for those wishing to give presentations at the conference and demonstrating sufficient need. Visit the conference's web site for more information on how to apply.

STRUCTURE OF THE EVENT

Talks will conform to customary conference format: 12 min plus 3 min for questions. The two best presentations will receive an AWARD, consisting of cash prize of $100 plus a certificate.

Thursday and Friday will be dedicated to student talks during the day and roster sessions in the afternoon. Between sessions there will be generous tea and coffee breaks to encourage discussion. In addition to talks there will be two special presentations on tips for successful grant applications and how to make the most of your graduate supervision. For informal discussion there will be barbecues on both Thursday and Friday evenings. Saturday morning an optional field trip will take place to Tidbinbilla Nature Reserve, where there are several beautiful bush walks.

ABSTRACTS

Submission of abstracts via the web page only: http://www.anu.edu.au/EES_BOZO/

VENUE

The conference will be held on the Australian National University campus in Canberra. Presentations will take place in the new seminar room at the Division of Botany and Zoology. All modern audio-visual aids will be available, including facilities for Powerpoint.

Accommodation is adjacent and the Student Union is a five minute walk, where there are many inexpensive eating options as well as a small grocery (not to mention a lively bar). Canberra's civic area is also only a 10 minute walk away for an additional range of restaurants, bars and entertainment.

To REGISTER YOUR INTEREST please reply to studentconference@anu.edu.au.
Anyone who registers will be placed on the conference mailing list and will be automatically kept updated on deadlines for abstract submission and registration

Further information, regular updates and on-line registration form

http://www.anu.edu.au/EES_BOZO/

National Postgraduate Conference in Ecology, Evolution and Systematics

Organised by the Graduate Program In Ecology, Evolution and systematics
School of Life Sciences
The Australian National University
Canberra ACT 0200

LETTER FROM RUSSIA

Contributed by Bill Williams (Prof W.D.)

Allow me to introduce myself. My name is Alexey Kotov. I am working at the laboratory of Prof N.N. Smirnov in Moscow and I am working on the morphology, systematics and biology of different representatives of Anomopoda (Cladocera). I am not a well known scientist and my experience in the field of zoology is relatively small. Prof Smirnov is known as a specialist on Australian "cladocerans". Now I am dealing with some Australian animals (and problems) too.

Keeping in mind the non-cosmopolitanism of Anomopoda, it is necessary for me to have any samples with common animals from different localities for accurate comparative morphology or taxonomical researches. I have communicated with only two "cladocerologists" from Australia, Prof B. Timms and Dr. R. Shiel. Sorry for my tactless, but the receipt of material from your country would be very interesting and important to me. Maybe, you have in the collection any samples which are common in Australia, but very interesting for me the following taxa:

1. *Kurzia* (Chydoridae)
2. *Saycia*
3. Any Macrothicidae
4. *Ilyocryptus* (Ilyocryptidae) – the most important for me because I am currently studying this genus.

Last spring, I have presented my Ph.D.. Some of these taxa are very important for the preparation of a final version of my book on comparative morphology of anomopods. ,

If samples, containing these taxa, are present in your collection, could you possibly send me samples, please? Of course, please, do it only in the case, if this operation will not be accompanied by any difficulties for you.

Yours sincerely

Alex Kotov

AUSTRALIAN SOCIETY FOR LIMNOLOGY MEDAL

CALL FOR NOMINATIONS

The Australian Society for Limnology Medal commemorates Hilary Jolly, a founding member of the Australian Society for Limnology, and is presented to a person who in the opinion of the Society, has made an outstanding contribution to Australian Limnology. The ASL Medal (formerly the Jolly Award) has become ASL's (and arguably Australia's) most prestigious prize in Limnology, considered by members to indicate overall scientific excellence and outstanding achievement.

Any person may be nominated for the Medal, but nominations may only be made by financial members of the Society. The nomination must be in writing and must be seconded by a financial member of the Society. Nominations must address the relevant selection criteria and a current copy of the nominee's CV should be included if deemed appropriate. Each nomination will be assessed by a Committee of ASL which is chaired by the President. An award is not necessarily made each year.

The full regulations governing the Medal are outlined below.

Nominations should be forwarded to Dr Pierre Horwitz (President, ASL), Centre for Ecosystem Management, Edith Cowan University, 100 Joondalup Drive, Joondalup, WA 6027.

AUSTRALIAN SOCIETY FOR LIMNOLOGY MEDAL

REGULATIONS

The following guidelines have been developed with a view to maintaining a consistent procedure for the Society for awarding the Australian Society for Limnology Medal.

Regulations concerning the structure and functioning
of the ASL Medal Committee.

Selection Criteria

The ASL Medal will be awarded where an outstanding contribution to Australian limnology can be demonstrated by ANY OR ALL of the following:

- RESEARCH EXCELLENCE: the nominee has displayed excellence in any of the fields of limnological research, as demonstrated by key research papers and publications, or significant technological advances

- EDUCATION AND/OR COMMUNICATION EXCELLENCE: the nominee has played a significant role in the advancement and dissemination of limnological knowledge, where this has enhanced the knowledge of Australian aquatic systems in a variety of forums

- MANAGEMENT EXCELLENCE: the nominee has played a significant role in the protection of, conservation of, or management of Australia's limnological resources, and has shown administrative excellence in dealing with limnological issues.

NB. While the terms 'excellent' and 'significant' are relative and open to interpretation, the spirit of the award should be that the person has shown leadership and influenced others to achieve. Further, that influence should be sustained over a number of years.

The Medal is not intended for administrative excellence and service to ASL. These are more appropriately recognised by other awards, such as life membership of the Society.

Membership and meeting of the ASL Medal Committee

1. The Committee shall consist of three members: The President and two others selected by the Executive. In establishing the Committee, each new Executive should consider an appropriate balance in terms of gender, discipline and backgrounds of research/management, but must ultimately ensure that the Committee has experience in the judgement of limnological excellence. This may include previous recipients of the Medal (or Jolly Award). No one person should sit on the Committee for more than three years.
2. The Committee should discuss the award at a meeting or by telephone or by email.
3. The committee's chairman will be the President (or nominee) and he/she will be responsible for organising the call for nominations, circulating nominations and arranging suitable meetings for the selection process. The Secretary of the Australian Society for Limnology will provide administrative assistance as required.
4. The Committee will assess nominations and, where it deems that an award should be made, make recommendation(s) to the Executive, through the President, for final

endorsement. A two-third's majority is sufficient for the Committee to recommend that an award be made.

5. A member of the Executive, or a member of the ASL Medal Committee, may not vote on a nomination where a conflict of interest is likely to occur. If the conflict of interest results in an inoperable Committee, the President (or nominee) is empowered to co-opt from the ASL membership for the purposes of a decision on the nomination.

Nominations

1. Any person may be nominated for the ASL Medal.
2. Only financial members of the ASL may nominate a person for the ASL Medal. The nomination must be in writing and must be seconded by a financial member of the Society.
3. Nominations must include a supporting statement addressing the relevant selection criteria and, if deemed appropriate, a current copy of the nominee's CV.
4. Assessed nominations will lapse immediately. Unassessed nominations (when the Committee has not been able to make a decision) will be forwarded to an incoming Committee.

Citation

The announcement of an award will be made at the annual conference and will appear in the Society's Newsletter accompanied by a citation describing the reasons for the award.

Award Value

The nature and value of the award will be determined by the Executive Committee of the Society. The award will normally constitute a Medal (suitably inscribed), and an economy airfare, registration and reasonable accommodation costs will be paid for the recipient to attend an Annual Congress (see below).

Conditions of the Award

Unless extenuating circumstances are operating, the Medal can only be awarded (and presented) to the recommended recipient in person at the next Annual Congress of the Australian Society for Limnology. In accepting the award the recommended recipient will be required as a condition of the award to present the "Hilary Jolly Memorial Lecture" to be scheduled during the Annual Congress. The Award address should be accompanied by a paper intended for publication in a refereed international journal, and the paper should include a footnote or byline to indicate its significance.

Prepared by a sub-committee of the Australian Society for Limnology, January - June 1998.

STUDENT TRAVEL AWARDS

Applications are invited from research students for travel assistance to attend and present a paper at the Annual Congress of the Australian Society for Limnology. The purpose of this assistance is to encourage students to present the results of their work in public. Students who are carrying out research in any branch of limnology for a higher degree are encouraged to apply. The following rules apply for assistance:

1. Applicants must be full-time postgraduate students at any Australian University, College of Advanced Education or Institute of Technology. There is no age limitation. Applicants must have current financial membership of the ASL for at least 6 months.

2. Assistance will be granted on the recommendation of a panel of three appointed by the Society.

3. Applications must include a written statement of no more than 200 words describing the research, its significance and the stage that has been reached. This statement must be endorsed by the student's supervisor. An abstract of the paper that the applicant proposes to present must also be included.

4. Award of assistance will be judged on: (I) significance of the work; (ii) originality and soundness of the research; (iii) the progress made and whether the stage has been reached where something useful can be presented; (iv) ability to present a clear and concise statement of the study.

5. Applicants must be lodged with Dr Richard Marchant, Museum of Victoria, 71 Victoria Crescent, Abbotsford, VIC 3067 by **30 September 1999.**

STUDENT PRIZES

At the Annual Congress, there will be three student prizes of books (chosen by the recipient) to the value of $100. The prizes are:

1. Prize for the best oral presentation by a Ph.D. or Masters student.
2. Prize for the best poster presentation by a student.
3. Prize for the best oral presentation by an Honours student.

Posters will be assessed during the dedicated poster session and must be attended by the author, who will explain the presentation and field questions. There will be no oral sessions concurrent with the poster session.

The Honours prize was felt desirable because for a number of years members have felt that recent Honours graduates are less experienced at oral presentations and are therefore disadvantaged compared with other graduate students who have nearly completed their research. We hope this prize will encourage recent Honours graduates to attend Congresses and share their results with other members of ASL.

To be eligible for a student prize, students should be current, financial members of ASL, and must give their presentation within 18 months of receiving their degree. The student prizes will be judged by a committee or committees convened by the ASL Executive at the Congress. Wherever possible, such committees will not contain supervisors or Co-authors of candidates for the prizes.

ANOTHER ONE OF THOSE STUDENT THINGYS

Postgraduate students at the Australian National University are organising a student conference at the beginning of next year to encourage graduate networking, particularly at the cross-disciplinary level. We are targeting students of any discipline researching aspects of ecology, evolution or systematics. However, having an extreme freshwater slant to my own research I was hoping to publicise the conference to as many fellow limnology students as possible.

Thus, to the crux of this message - would you be able to advertise our conference in the upcoming ASL newsletter and on the web? We would really appreciate the publicity! The details of the conference can be found below this message.

Cheers
JANET

National Postgraduate Conference in Ecology, Evolution and Systematics
Thursday - Saturday, January 20-22, 2000
Email: studentconference@anu.edu.au
The National Postgraduate Conference in Ecology, Evolution and Systematics
c/- Botany and Zoology
The Australian National University
Canberra
ACT 0200
http://www.anu.edu.au/BoZo/

Janet Pritchard
Division of Botany and Zoology
Australian National University
Canberra
ACT 0200
Australia

Ph: (02) 6249 0497
Fax: (02) 6249 5573
E-mail: Janet.Pritchard@anu.edu.au

New Zealand Limnological Society
And
Australian Society of Limnology

Joint Annual Conference

29 November 1999 - 2 December 1999

Wairakei Resort and Conference Centre,
Wairakei, Taupo,
North Island,
New Zealand

SPONSORS: ENVIRONMENT WAIKATO

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MINISTRY FOR THE ENVIRONMENT

TAUPO DISTRICT COUNCIL

NEW ZEALAND LIMNOLOGICAL SOCIETY *WWW.RSNZ.GOVT.NZ/CLAN/LIMSOC/*

Australian Society of Limnology *www.ntu.edu.au/science/mdouglas/asl.home.html*

CONFERENCE

This conference represents the first occasion that the New Zealand and Australian Societies have met to share freshwater research advances, management solutions, and common freshwater issues. This acknowledges the growing body of scientific research, and application to freshwater management in the two countries; recognised in the overall theme of the meeting and the requirement in both countries for the sustainable management of aquatic ecosystems as we enter into the new millennium.

As a result, the conference has been organised with several session themes in mind. Moving away from the conventional approach of biological groupings for common interest papers, this year we are looking to applied research and management issues. In this way each session can cross a variety of disciplines and appeal to research scientists, water mangers, policy analysts, landowners, and other end-users as a whole. It is the hope of the organising committee that the conference will attract participants from a variety of institutions in both Australia and New Zealand. In addition, the organisers are polling interest in workshops on (i) lake management and (ii) sedimentation. Please indicate your interest in one, or both, of these workshops on the registration form.

CONFERENCE VENUE

The Wairakei Resort and Conference Centre is nestled in the heart of Wairakei Park in the Lake Taupo District, and is about 10 kms from Lake Taupo and Taupo township. The Resort has modern conference facilities with all the latest technical presentation equipment, and six conference rooms catering for up to 500 delegates. The Centre includes a 9-hole golf course, 2 heated swimming pools, all-weather floodlit tennis courts, 2 spa pools, games rooms, volleyball, 3 bars and 2 restaurants. Childcare facilities are available for large groups children (>6 children) at $10 per half day, and babysitters can also be arranged.

Accommodation

Accommodation is available at the Wairakei Conference Centre, at the Wairakei Lodge close to the venue, or in Taupo, about 10 kms from the conference venue. Camping facilities are also available within the Wairakei Park. For further information on Wairakei and Taupo accommodation and other facilities visit "Destination Lake Taupo": *www.laketaupo.tourism.co.nz/*

Wairakei Conference Centre The Resort boasts 127 rooms in many different styles and options: Villa suites, Villa rooms and Premium Rooms. All rooms are beautifully decorated and appointed with every modern convenience. All rooms are available for a standard $135.00 +GST per night in single, share twin and share triple arrangements.

Wairakei Lodge Double, twin share and bunk beds available. Facilities include self-catering, laundry, restaurant and bar, takeaway bar, tennis courts, and only a short walking distance from the conference venue. Beds available from $20.00 per night excluding breakfast.

Motels There are a variety of motels available in Taupo, which is about 10 kms from the conference venue.

Backpackers Rainbow Lodge and Berkenhoff Lodge have rooms available for conference delegates. Dormitories: $17.00 per night; Double rooms $38.00 per night. Provide own sleeping bag, additional costs for linen hire. All facilities available.

Instructions to Presenters

Oral Presentations
With the exception of invited keynote speakers, oral presentations will each be allocated 20 minutes, (15 minutes presentation plus 5 minutes question time). Times will be strictly adhered to. PowerPoint, 35-mm slide and overhead projection facilities will be available. Please indicate clearly your requirements on the registration form.

Presenters are asked to indicate the preferred theme for their oral presentation on the registration form; all attempts will be made to meet these requests, but the organising committee reserves the right to alter themes as necessary, depending on demand and the nature of presentations. Please note that, with the exception of invited keynote speakers, there will be only one oral presentation per participant (participants may appear as co-author on other presentations).

Poster Presentations
Posters may be displayed throughout the conference. A special poster session will be scheduled when poster presenters will be expected to be available to answers questions on their contributed work.

Abstracts
All participants proposing to give an oral or poster presentation presentations must submit an abstract, which will be published and made available with the conference packs. Please follow the instruction detailed below for preparing and submitting abstracts. **The deadline for receipt of abstracts is 31 August 1999.**

Abstracts should be no more than 300 words, and prepared on a single A4 sheet with 3 cm margins on all four sides and using Times Roman font. Titles should be in 14pt capitals and bold, and the text of the abstract in 12pt. The authors names should follow below the Title, and the presenting author's name should be underlined. Author's addresses should in italics, and when from more than one institution, should be clearly marked with symbols to the relevant address. A blank line should be left between the title and the authors and their addresses, and two lines between the address line(s) and the beginning of the abstract text. Paragraphs should be indented 1 cm and the text fully justified.

The main text of the abstract should give a brief summary of what the presentation is about, giving context, approaches, outline results and tentative conclusions. It is possible to cite published work in the abstract. The references should be numbered in the text, thus (1), and cited at the end of the abstract as: (1) Author, et al. 1999: Title. *Journal. Vol*: Pages

Symposium Proceedings
There will be no arrangements for the publication of the presented papers in formal proceedings. As with previous Limnological Society conferences, the Abstracts will be published in the Annual Newsletter. Authors are thus free to present recent work that is in press or is intended for publication elsewhere.

Authors of keynote speakers may be invited to submit their papers for publication in a special edition of *Freshwater Biology*, where they will be subject to the Journal's normal peer-review procedures. Selected papers may also be invited to submit their papers to a special edition of New Zealand Journal of Marine and Freshwater Research. At the time of going to press negotiations were still underway.

Conference Entertainment

If you are interested in participating in an impromptu homegrown concert at the BBQ on Monday 29 November please contact John Quinn at: j.quinn@niwa.cri.nz

Field Trips

A choice of field trips will be available on Wednesday 1 December (subject to demand and availability):

Lake Taupo and TDP
Participants will circumnavigate New Zealand's largest waterbody, Lake Taupo, viewing crystal clear trout streams and riparian management zones en route. At the southern end of the lake participants will view the Tongariro River, a premier trout river, before visiting the Tokanuu power station. At Lake Rotoaira, participants will learn about the influence of lake level changes on the ecology of the lake. Other features of the Tongariro Power Scheme will be visited.

Mt Ruapehu and mountain streams
As for the TDP field trip, participants first travel south, circumnavigating Lake Taupo and viewing crystal clear trout streams and riparian management zones en route. After crossing the Tongariro River, participants will climb to the desert road, and view mountain streams crossing the Rangipo Desert. The environmental risks of potential lahars will be discussed. After travelling around the southern part of the mountain, the trip will return via the western slopes, visit the Seismic Centre at Ohakune, as well as the Department of Conservation Centre at the Chateau.

Geothermal Ecosystems and Rotorua Lakes
Participants will visit the Wairakei geothermal field and power station and learn about the generation of power from the natural steamfields. En route to Rotorua, participants will see extensive plantation forests in various stages of harvest, and will visit the geothermal centre at Waiotapu Thermal Wonderland, with the famous Champagne Pools. There may be an opportunity to bathe in the natural geothermal stream waters. Management initiatives to improve the water quality at Lake Rotorua will be viewed before visiting Lake Tarawera. There will be an additional $10.00 charge for a visit to Waiotapu Thermal Wonderland.

Waikato River
The Waikato River is New Zealand's longest river, and is significant for cultural, navigation, power and recreational purposes. This field trip will look at the upper reaches of the river, visiting power generating dams, and several of the lakes that have been formed. Participants will learn about the fishery issues in relation to the history of the river, as well as the influence of natural and human induced geothermal influences on the river. A visit to the Orakei-Korakau geothermal area will also be included. There will be an additional $10.00 charge for a visit to the Orakei-Korakau geothermal area.

Pureora State Forest Park
For the birdwatchers and trampers, a days walk in well preserved podocarp forest, home to a variety of native birds and plants. If keen we can arrange an early start to hear the dawn chorus.

REGISTRATION AND ENQUIRIES

Please indicate your requirements on the attached form and return to:

Dr IKG Boothroyd
NZLS/ASL Limnology Conference
C/- NIWA
P.O. Box 11-115
Hamilton
NEW ZEALAND

Ph: +64 7 8561737
Fax: +64 7 8560151
E-mail: i.boothroyd@niwa.cri.nz

Alternatively your requirements can be e-mailed to i.boothroyd@niwa.cri.nz
Conference information and updates can be viewed at: *www.rsnz.govt.nz/clan/limsoc/*

Registration and Booking Form

N.B. All prices are in New Zealand dollars

I wish to attend the joint NZLS/ASL Conference:

☐ NZLS/ASL member $ 140.00 ☐ NZLS/ASL Student member $ 100.00

☐ Non-members $ 185.00 ☐ Single day registration $ 60.00

Details as you wish them to appear on name badge

Name: ..... Title: .....

Affiliation: .....

Address: .....

.....

.....

Tel: ..... Fax: .....

E-mail: .....

Presentations

I wish to present an: ☐ oral presentation
☐ poster presentation

Title: .....

.....

.....

Preferred session: (please circle) Please indicate if you are a student ☐

Aquatic Biodiversity: Measurement, pattern and scale
Lowland rural streams
Wetlands: evaluation, management and restoration
Native fish: ecology and management
Lake and reservoir management
Lake food web structure and function
Aquatic perspective's in theoretical ecology
Land-water interactions
Ecology and management of urban streams
Invasive species: ecology and management
Underwater world: hyporheic and groundwater ecology
Environmental Flows
Sedimentation and the effects on benthic habitats Workshop
Other:.....

Workshops

I am interested in a workshop on:

☐ Lake Management (Fri. 3 Dec.) ☐ Sedimentation and effects on benthic habitats

Transport There will be a bus leaving Auckland International Airport at approx. 1 pm on Sunday 28 November 1999 to transport conference delegates to Wairakei. Please indicate if you would like a seat on this bus. ☐

Accommodation

Please note, while we will book accommodation, individual delegates will be responsible for settling all accounts with the accommodation providers. Students and self-funded individuals will be given preference for the budget accommodation.

Please indicate dates

☐ Sun 28 Nov ☐ Mon 29 Nov ☐ Tues 30 Nov ☐ Weds 1 Dec ☐ Thurs 2 Dec ☐ Fri 3 Dec

Please indicate accommodation preference

☐	Wairakei Resort and Conference Venue	Single	☐	35.00 per night
		Twin share	☐	$ 67.50 per night
		Triple share	☐	$ 45.00 per night
☐	Wairakei Lodge	Share	☐	$ 20.00 per night
☐	Taupo Motel	Various	☐	Varies
☐	Backpackers (supply own sleeping bag)	Share	☐	$17.00per night
		Double	☐	$38.00 per night

BBQ Dinner (Monday 29 November 1999) **$30.00**

NB: BBQ included in registration fee for students

☐ BBQ dinner at the Geothermal Prawn Park. Bar facilities available.
Optional Prawn Farm tour and Huka Jet ride (at own cost).

Field Trip (Wednesday 1 December 1999) **$35.00**

Please indicate your preference

☐ Lake Taupo and TDP
☐ Geothermal ecosystems and Rotorua Lakes
☐ Pureora State Forest Park
☐ Mt Ruapehu and mountain streams
☐ Waikato River

Conference Dinner (Wednesday 1 December 1999) **$45.00**
Non-members $60.00

☐ Wairakei Conference Centre, with live music and entertainment.

☐ **Please indicate if you are vegetarian**

Total Costs

Registration	.....
BBQ Dinner (students included in registration)	.....
Conference Dinner	.....
Field Trip	.....
TOTAL	.....

Return to:
Dr IKG Boothroyd, NZLS/ASL Limnology Conference, C/- NIWA, P.O. Box 11-115, Hamilton, NEW ZEALAND, Ph: +64 7 8561737, Fax: +64 7 8560151, E-mail: i.boothroyd@niwa.cri.nz

DAMPIER 300

Biodiversity in Australia 1699–1999 and beyond

6 to 10 December 1999

Alexander Library Theatre, Perth Cultural Centre, Francis Street

Perth, Western Australia

Organisers

Australian Systematic Botany Society

Society of Australian Systematic Biologists

Invertebrate Biodiversity and Conservation

The final biodiversity conference of the 1900s will be held in Perth, Western Australia, from 6 to 10 December 1999. It will commemorate the 300th anniversary of William Dampier's second visit to 'New Holland', when he made the first authenticated collections of plant specimens from the continent. The major theme of the conference will be 300 years of Australian biodiversity—what have we learned, and where do we go in the 21st Century?

Expressions of interest are called for presenting papers and posters. Abstracts will be required by 30 September 1999. Bearing in mind the major historical and scientific themes as set out above, principal areas of interest will be:

- the Shark Bay region, a World Heritage Site with a wealth of arid coastal landforms and diverse geology, flora and fauna
- plant systematics, especially overviews of major groups including cryptogams
- arid zone biodiversity
- invertebrate diversity: subterranean biota, sampling and monitoring protocols, conservation
- co-evolution
- analytical advances and interactive keys
- research priorities and funding

There will be two pre-conference excursions, and an afternoon cruise up the Swan River, including a visit to a winery in the State's original wine-producing district, the Swan Valley.

For further information and for a registration brochure, please contact:

Alex George, Kardinya *phone*: (08) 9337 1655 fax: (08) 9337 9404
email: alextris@opera.iinet.net.au

Mark Harvey, Western Australian Museum, *phone*: (08) 9427 2737 fax: (08) 9427 2882
email: mark.harvey@museum.wa.gov.au

Jonathan Majer, Curtin University of Technology, *phone*: (08) 9266 7041 fax: (08) 9266 2495
email: imajerj@info.curtin.edu.au

Or visit our website at:

http://www.museum.wa.gov.au/Dampier300/Dampier300.htm

STUDY COURSE ON GROUNDWATER ECOLOGY

DEAR COLLEAGUES!

As you may be know during October of this year we are organising an Advanced Study Course on Groundwater Ecology financially supported by the European Union.

The deadline for inscriptions is 30 April. We would greatly appreciate it if you or some of your students will participate in this course. The content of the course and the admission conditions to the course can be downloaded from the Internet website http://www.oeaw.ac.at/limno/eu/gw-course.htm

The elected course participants will have to pay only the travel costs to Vienna and the return home. For the stay in Vienna full costs will be covered by EC funds. We still have places available and it will be a pity if until the beginning of May the minimum of 25 participants will not be found. This would mean a possible cancellation of the course.

Yours sincerely,

Dan Danielopol

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Interesting word #524

Knobkerrie – a short heavy stick with a knob on one end used for both striking and throwing by South African Natives

FROM PROTOZOANS (SINGLE CELLS) TO BREAST CANCER RESEARCH (NEOPLASTIC CELLS)

My PhD project on microspatial partitioning by freshwater testate amoebae on *Vallisneria gigantea* leaves in Ryans 1 Billabong (Near Albury/Wodonga – ED) seems a lifetime away from my current appointment at The Queen Elizabeth Hospital, Adelaide. A stark contrast, but nevertheless, requiring of the same skills and powers of observation and deduction, that's my story anyway.

My undergraduate degree in Biochemistry and Microbiology at Adelaide University did not prepare me for the intricacies of ordinations, multivariate and univariate statistical analyses. Undeterred and armed with a copy of Quinn and Keough (2nd draft), it culminated with me being presented with a fancy piece of paper by Prof. Nancy Millis during graduation of May 98.

A change in research direction came in the form of the Esther Caldwell Cook Postdoctoral Cancer Research Fellowship. Some people might consider this the not obvious and not natural progression from freshwater ecology; to me it was akin to embarking on an exciting new adventure. From wading in billabongs and dodging cow pats to scrutinizing short fragments of breast tumour DNA in search of the elusive answer as to why some genes from tumour tissue are modified in their promoter region. This epigenetic modification, known in the trade as DNA methylation is a mechanism by which gene activity may be silenced and rendered nonfunctional. My gene of choice BRCA1, is a tumour suppressor gene which is inactivated in a proportion of patients usually in women under the age of 50, so called sporadic cases with no history of familial breast cancer.

Some of the sophisticated techniques used in this project include collecting the still warm breast cancer tissue kindly supplied by the patient and surgeon, sprinting up 2 flights of stairs to the histopathologist and getting these kind folks to part with just enough material for my purposes. Polymerase Chain Reaction (PCR) is a stock standard but cool molecular biological technique to amplify/produce large enough quantities of target DNA from initial picogram amounts for analysis. This genomic DNA is then subjected to bisulfate modification and undergoes Methylation Specific-Single Strand Conformation Analysis (MS-SSCA) to detect changes in the 251 base pair fragment of target DNA. Variant DNA bands can be sequenced and the degree of methylation assessed.

All in all the project has been bubbling along nicely, lots of new things to learn and absorb. Life is certainly not boring.

by

Lor-wai TAN

THE INTERNATIONAL DEMAND AGAINST DAMS IS GROWING

By Jorge Cappato

March 14: International Day of Action Against Dams and for Rivers, Water and Life

Environmentalist Groups warn about large projects' impacts on the Parana-Plata Basin

On March 1997, in Curitiba, Brazil, it started to make it clear that the proliferation of large dams on the planet rivers is an evil only comparable to the multiplication of nuclear plants since the second post-war until Chernobyl. At the closure of the "1st International Meeting of affected people dams", the attendants from some twenty countries including Argentina, Brazil, Bolivia, Chile, Paraguay, Mexico, USA, Russia, India, China, Thailand, Lesotho, France and Spain, signed the "Declaration of Curitiba" and declared

March 14: "International Day of Action Against Dams and for Rivers, Water and Life". Those inhabitants displaced and ruined by dams that have been built on places so distant like the Narmada river in India, the Tocantins, Amazonian tributary, the Malibamatso, in Lesotho, and the Parana in Yacyreta, had given testimony of uprooting, unemployment, illness and poverty brought by large dams to the local populations. (1) (2)

An additional result of the International Meeting of Curitiba was made concrete on the subsequent month, when the World Bank (WB) and the World Conservation Union (IUCN), in Gland, Swiss, took the first step towards the creation of the World Commission on Dams, best known by its abbreviation in English WCD. Nowadays, the WCD is an independent entity that poses to examine, scientifically and objectively, the effectiveness and the impacts of large dams, and to assess alternatives for the hydrological and energetic resources.

In Argentina, the large dams issue is generating growing polemic and opposition. Mainly, since 1996 when the hydroelectric project Parana Medio (an old proposal polished up by the North American consortium EDI) re-arose; the provincial plebiscite in Misiones resulted in more than 90% against Corpus dam; and on the last months for the resisted dams of Bermejo as well, which would flood hectares of National Parks. Yacyreta, where environmental and social problems as a consequence of the reservoir filing and irregularities' demands still remain, is of course in the center of the scene. (4)

Conflictive Settings

The debate was re-updated in the frame of the crowded 4th. Conference of the Parts of the Climate Change Convention, the COP4 took place in Buenos Aires on last November, when an Argentinean Government report was made known, on which with the excuse of mitigating the emission of greenhouse effect gases, the construction of three new nuclear plants and three new large dams are proposed, on the energetic "scenery" of the first years of the 21st Century. (5)

Now, due to the International Day of Action, environmentalist groups of Argentina expressed their concern in front of the destructive impacts of large projects on the Parana-Plata Basin. In the first place, such mega-hydroelectric as Corpus, Garabi and Parana Medio, y the elevation of Yacyreta up to the height of 83. Not to avoid another decisive aspects on the use of the rivers and the water, as is the case of the Canal Federal. (6)

The document is signed by Greenpeace Argentina, Buenos Aires Alerta, Foro

Ambiental Ciudadano, Equipo Nacional de Pastoral Aborigen, Grupo Ecologista Chaco, Comision del Rio Negro, SOS Rio Gualeguay, Cabayu Cuatia, Foro Ecologista de Parana, Taller Ecologista-Rosario, Fundacion Proteger, Red de Asociaciones Ecologistas de Misiones, Grupo Yaguarete-Salta and Salus Terraede Santiago del Estero, among more than thirty environmentalist and social entities that work protecting rivers and the communities that find in them their way of life and sustenance.

An unavoidable debate

On the declaration, sent to the commissions pertinent to the Congress of the Nation and spread among the national and international press, the NGOs are also claiming to prioritize alternatives energies and to stop the damming projects. "We demand that this new scene, at present in preparation, should prioritize renewable energies such as the solar and the wind power, and also the energetic efficiency", underline. By the end of '98 the Congress passed the Aeolian Law, meanwhile there are important legislative advances in several provinces to promote clean and renewable energies. It is precisely in this aspect that the declaration demands "the prompt passing of the Anti-Dam Law in the province of Santa Fe, as already happened in Entre Rios, and we urge the legislators of Chaco, Corrientes, Formosa and Misiones, to consider similar laws.

In the same sense, the necessity of protecting fluvial ecosystems is again present when is expressed "the support to the parliamentary initiatives, not only the national but also the provincial ones, which foster care, conservation and sustainable use of the Parana river, its wetlands and the associated ecosystems". (7)

Finally, the declaration claims to the National State "the urgent implementation of an Organism of Drainage Control, which should have been constituted according to a Presidential Decree in 1993", and that as regards the deepening works on the Parana River, "the environmental impact assessment, required by the national legislation, is properly presented and spread in time and form, including public participation".

On this March 14, the claims to preserve the richness of the rivers fostering a real development, capable of keeping the resources from which society nurses itself, are going to be listened higher than ever.

NOTES:

1."All around the world, dams are throwing people out of their homes, are flooding rich soils and forests, are destroying fishing and clean water supply and are also provoking cultural disintegration and economic impoverishment of local communities. All over the world, millions of people are suffering as a consequence of dams. There is an enormous gap between the economic and social benefits promised by dams' builders and the actual results once these are finished. Dams have always costed more than was projected. Dams do not control floods; however they can turn them more destructive. It is necessary to manage the water resources in a participating and sustainable way." (From the Declaration of Curitiba).

2. P.McCully, Silenced Rivers, Zed Books, London, 1996 (partial translation into Spanish).

3. The WCD is making a list of hydroelectric projects and basins that need to be examined; 45 study cases in a first stage.

4.J.Cappato, "The World Bank acknowledged Yacyreta's impacts", El Litoral, Santa Fe, July 4 1998.

5. In the report "Mitigation of greenhouse gases effects", presented in the COP4, technicians from the Secyt propose a scenery that includes the building of dams on the Bermejo river, Garabi dam

(Argentina-Brazil) on the Uruguay river, and the Corpus dam (Argentina-Paraguay) and Parana Medio dam (Argentina).

6. The Canal Federal plans to deviate the Dulce river waters, which sustain 400,000 people and the large wetlands of Rio Dulce and Mar Chiquita, towards arid and non inhabitant zones of La Rioja.

7. An example is the bill presented in Entre Rios to declare Parana river and its wetlands on its medium stretch "Patrimony of Humanity", in the frame of a plan of environmental management of multiple development.

Further information: Fundacion Proteger - IUCN Member
Wetlands Group IUCN-Argentina; e-mail: jcproteg@satlink.com

DORMANT CRUSTACEAN EGGS SURVIVE STRANGE ADVENTURE

Thinking like military historians, limnologists at Cornell University have documented the invasion by an exotic species, "Daphnia exillis," in one of North America's dirtiest lakes -- an invasion that ultimately failed when a polluting industry cleaned up its act.

Their report in the May 1999 issue of the journal Limnology and Oceanography describes how diapausing (or dormant) eggs of the crustacean were:

* Hauled from the toxic bottom of New York state's Onondaga Lake by Cornell students,

* Hatched in the laboratory to yield healthy crustaceans, and

* Genetically traced to one pioneering organism that hitchhiked east in the 1920s.

"These little guys are real survivors, considering that they successfully colonized a lake far from their natural habitat and banked their eggs for the future in a place that became a Superfund toxic cleanup site," says Nelson G. Hairston Jr., the Frank H.T. Rhodes Professor of Environmental Science at Cornell.

Hairston (pronounced "HAHRS-ton") was leading a team of Cornell biology students and professional limnologists in a U.S. Environmental Protection Agency-funded survey of organisms in lake-bottom sediments when Meghan Q. Fellows found the eggs of one creature that "didn't belong" in Onondaga Lake -- or anywhere east of the Mississippi.

The Daphnia discovered by Fellows, a Cornell undergraduate at the time and now a graduate student at San Diego State University, were known to inhabit shallow, fishless salt ponds in the western United States. Like other diapausing organisms, adult Daphnia produce eggs that can "sleep" for years until they sense favorable conditions for hatching, a useful trait for repopulating ponds that periodically go dry. Adult Daphnia are less than 1/8th inch long, and their diapausing eggs, called ephippial cases, are microscopic.

Hairston's laboratory in the Cornell Section of Ecology and Systematics has considerable experience with diapausing aquatic life. Its researchers once revived 300-year-old copepod eggs from a Rhode Island pond lake. So awakening decades-old eggs from Onondaga Lake was not a problem, once the scientists found the right combination of temperature, water chemistry and light.

But the crustacean Rip van Winkles provided no clues about how their salt-loving ancestors got to a freshwater lake in upstate New York until a few historic facts came to light, and were further illuminated by a genetics-tracing technique similar to DNA fingerprinting:

- For decades in the 1900s, Onondaga Lake was about 1/10th as salty as sea water because a lakeshore factory used geologic deposits of sodium chloride salt and limestone to manufacture soda ash. Massive waste beds of calcium carbonate and sodium choloride were left at the water's edge, raising the salinity of Onondaga Lake to a level that Daphnia would find comfortable. Indeed, even before this salt pollution of the industrial era, sodium chloride deposits from ancient inland seas were exploited by Native Americans and European settlers, giving Syracuse the nickname Salt City.

* The soda ash factory, known locally as the Solvay Process plant, was owned by Rowland Hazard, who in the 1920s also owned a lead mine in Missouri, at the eastern edge of the natural range of the exotic Daphnia.

* Mine operators sometimes transferred machinery from one site to another, and with the equipment could come debris from the previous location.

* Genetic analysis of animals hatched from the dormant eggs showed that they -- and probably all the billions of Daphnia that temporarily thrived in Onondaga Lake -- were related to a single, pioneering individual, a kind of Adam (or Eve) of a salty water garden.

"Our hypothesis is that a few Daphnia eggs hitched a ride in the dry mud on Mr. Hazard's lead-mining machinery, all the way from Missouri, and one lucky egg found a suitable home here and started it all," Hairston says. "Since they can reproduce without sex, all it takes is one."

He notes that a year-by-year analysis of sediments from the lake bottom indicates the presence of millions of Daphnia the first year, an unexplained absence of Daphnia eggs from 1927 to 1940, and a major resurgence that peaked around 1970, when there could have been billions of Daphnia in the lake.

Then the Daphnia declined and disappeared from the lake water by the early 1980s, leaving only diapausing eggs as a record of their failed invasion. The chemical industry had stopped depositing waste salts along the shore of the lake. Today the salinity level of Onondaga Lake is close to normal.

However, other toxic pollutants remain, and one -- mercury -- could account for some of Daphnia's reproductive difficulties. Beginning in 1946, mercury waste was created from a process that produced chlorine gas, and hundreds of pounds of the toxic heavy metal were dumped in the lake each year until 1970. Of all the Daphnia eggs recovered from lake-bottom sediments by the Cornell scientists, only those deposited less than 25 years ago are still viable and can be hatched. The rest probably are dead.

Daphnia eggs will rise again, Hairston predicts, every time a boat anchor stirs up sediment on the lake bottom. But the invaders won't get far. Unless the Salt City's lake turns saline again, the best place to see swimming "D. exilis" east of the Mississippi is in a Cornell laboratory.

Authors of the Limnology and Oceanography journal report, "Population of a failed invasion," are Hairston; Fellows; Linda J. Perry, a Cornell undergraduate at the time of the research and now a graduate student at Emory University; Andrew J. Bohonak, who obtained his Ph.D. at Cornell and is now at the University of Hawaii's Center for Conservation Research and Training; Colleen M. Kearns, technician in the Cornell Section of Ecology and Systematics; and Daniel R. Engstrom at the Science Museum of Minnesota's St. Croix Watershed Research Station.

In addition to the EPA, the study was supported, in part, by the National Science Foundation (NSF), the U.S. Department of Agriculture (USDA) and the Upstate Freshwater Institute in Syracuse. - By Roger Segelken

Contact: Roger Segelken

AUSTRALIA IS GETTING WETTER

Throughout this century, the trend in Australia has been toward wetter and warmer conditions. Results of the study, which uses data from the Bureau of Meteorology, have recently been published in the Australian Meteorological Magazine.

A study of daily rainfall at more than 300 sites across Australia from 1910 to 1995 indicates that parts of the continent have become wetter, with more rainy days and more heavy rainfall.

Annual total rainfall has risen by about 15 percent in New South Wales, South Australia, Victoria and the Northern Territory, with little change in the other states. Southwest Western Australia has become 25 percent drier in winter.

"There has also been a significant 10 percent rise in the Australian average number of rainy days" said Kevin Hennessy of the Commonwealth Scientific and Industrial Research Organization, the federal agency that conducted the study.

The Northern Territory and New South Wales have experienced the greatest increase in rainy days, while Tasmania and southwest Western Australia now have fewer rainy days than in the past.

"One of the most interesting findings from our study was an increase in Australian-average heavy rainfall" said Hennessy. "The heaviest daily rainfall has become eight percent more intense in summer with little change in the other seasons".

Increases in intensity of 20-30 percent have occurred in New South Wales in autumn and summer, in the Northern Territory in autumn, and in Western Australia in summer. Southwest Western Australia experienced a 15 percent intensity decrease in winter.

Throughout this century, the trend in Australia has been toward wetter and warmer conditions.

"Many climate models indicate that global warming may lead to more storms," said Hennessy. "Although the observations over Australia during the past century are consistent with the model results, there may be other factors causing the observed changes, such as land-use change, burning of vegetation, ozone depletion, sunspot activity and long-term natural variability".

From

ENN -Environmental News Network
http://www.enn.com/news/enn-stories/1999/04/043099/aurain_2938.asp

SOME NEWS AND COMMENTS ON INVASIONS

1 Below is a letter about invasive species in the US. It seems that Australia is not the only place threatened by aliens and misplaced species.

2 Wetland invasive species will also be discussed at the NGO mediated Global Biodiversity Forum 13 (7-9 May 1999) which precedes the Seventh Meeting of the Conference of the Ramsar Convention on Wetlands (10-18 May 1999) in Costa Rica. WWF Australia (Jamie Pittock) have taken a lead role in organising this particular workshop. The GBF is one of the products from Rio 92 and is held before many of the key international Convention meetings. See the Ramsar web page for details about this one. (www.ramsar.org)

3 Given other noises about invasive species and the recent development of the Australian National Weeds Strategy I am keen to produce an ASL policy position on wetland weeds. If you are interested could you please contact me and we can develop a proposal for consideration by the Exec. (As I'm away 4-28 May I'll not respond until early June.)

Letter to Al Gore follows -

The Honorable Albert Gore, Jr.
The Vice-President of the United States
Office of the Vice-President of the United States
Old Executive Office Building
Washington, D.C. 20501

Dear Vice-President Gore:

We write as a group of scientists, agricultural officials, and environmental experts to request your assistance in, and support for, the formation of a commission whose purpose would be to recommend new strategies to prevent and to manage invasions by harmful exotic species.

A rapidly spreading invasion of exotic plants and animals not only is destroying our nation's biological diversity but is costing the U.S. economy hundreds of millions of dollars annually. Biological invasions produce severe, often irreversible impacts on agriculture, recreation, and our natural resources. In some instances, they even have major human health consequences. The 21st century holds the clear threat of further devastating invasions unless a coordinated national effort is established.

In March 1993, twenty-five distinguished scientists and resource managers wrote to you identifying the need for an effective national program to combat invasions by nonindigenous plants and animals. You kindly replied that these issues indeed concern your office, and we were pleased to note that these problems had received your attention.

Since 1993, biological invasions by pest and nuisance species from foreign nations, and from one part of the United States to another, have continued almost unabated:

* Recent studies reveal, for example, that San Francisco Bay is invaded by a new exotic species on the average of once every twelve weeks. * At least 1.5 million acres in Florida have been invaded by nonindigenous plants, leading to a severe reduction in available native habitat.

* Foreign weeds are spreading on Bureau of Land Management lands at over 2,300 acres per day and on all western public lands at approximately 4,600 acres per day.

* Approximately 250 plant species meeting the Federal Noxious Weed Act's definition of a noxious weed remain unlisted and can still be legally imported into the U.S.

* In the Mississippi drainage basin, species richness is expected to decline by 50% within a decade because of zebra mussel spread.

* Exotic species invasions have contributed to the decline of 42% of U.S. endangered and threatened species.

Although the National Invasive Species Act of 1996 was an important step forward, the overall national effort to confront this crisis remains inadequate; it is primarily piecemeal, ad hoc, and reactive. For example, more than 20 federal agencies deal with invasive exotic species, but their policies and actions are uncoordinated and largely ineffective. There is not even a comprehensive data base on the problem. Innumerable state agencies and private organizations also operate in this arena, often entirely unaware of one another's problems and actions. Actions of various managers even inadvertently conflict with one another. Simply coordinating this effort would not only enhance its effectiveness but save millions of federal, state, and private dollars.

A commission could consider many potential ways of responding to this problem. One can imagine, for example, a center analogous to the Centers for Disease Control and Prevention (CDC), a high-level government office (like that of the Surgeon General) that might serve as a bully pulpit on this issue, a much-expanded and well-funded interagency task force, and numerous other possibilities. What is most urgent is to begin a high-level consideration of possible responses, as the situation is deteriorating every day. We are losing the war against invasive exotic species, and their economic impacts are soaring. We simply cannot allow this unacceptable degradation of our nation's public and agricultural lands to continue.

The cogent 1993 report of the Congressional Office of Technology Assessment, Harmful Non-Indigenous Species in the United States, on the extraordinary economic and health costs to this nation of exotic invasions, provides an excellent introduction to these issues. Please contact Don C. Schmitz (904-488-5631), James T. Carlton (860-572-5359), Daniel Simberloff (904-644-6739), or Phyllis N. Windle (301-345-8516) for more information about this growing environmental problem.

REPORT ON VIC CHAPTER SEMINARS

Joint Contribution from Ros St Clair and Michael Reid.

The Victorian chapter of ASL is again meeting at regular intervals. This years series of talks was off to a flying start thanks to Ben Gawne who travelled from Mildura at speak to us.

Ben spoke about a project carried out at Menindee Lakes by the CRCFE's Mildura branch. Ah! The joy of a project in a heavily modified area with an unpredictable climate. The project is investigating the relationships between water regimes, water chemistry and fish and invertebrate assemblages in the lakes. Ben presented the results of a survey carried out over a 12 month period (we think - it was two months ago now). Basically the idea behind the project was to investigate the feasibility of drying out one of the lakes as a means of water conservation - effectively introducing a drying phase. Data presented were preliminary, and patterns were difficult to discern. Ben also discussed some associated work which will hopefully illuminate some of the causal mechanisms. It was fascinating, and generated considerable discussion regarding the perplexing issues surrounding water regime and wetlands. We were all temporarily enlightened and permanently inspired. We heartily recommend that members should endeavour to make it along to as many of this series of presentations as they can.

As usual, Ben done good in trying circumstances. Three cheers for Ben!

On requesting a review of Sam Lake's talk on Global Climate Change and Australian Limnology, we got a decline for a "serious" response, but we also got this from someone who wishes to remain anonymous.
"It was a sad talk. It is hard to pull a positive direction out of it, other than move to a commune in the tropics and spend the rest of ones life in a happy drugged induced stupor. But don't use drugs that you have to smoke; in case climatic change happens faster before you've got rid of all your brain cells. The world will be populated by dead things. And carp. Two bright spots: Trout will die out, and while mosquitoes will sally forth in strength armed with a thousand fevers, at least mosquito fish should survive and will gobble them all up.

Wetlands are the source of all evil. They generate lots of greenhouse gases when they are wet. The ones up north, the taigas and tundras will generate even more when the world warms and the snow and ice melts and they become soggy rather than solid. So just when things have got a bit worse, they will suddenly get a lot worse. And then there will be even more mosquitoes.

There are two models: the slab model (a bit prehistoric, cant handle many variables, probably not even multi-dimensional, but solid and reliable) and the cupple model, which couples things up in a ways which become obvious after finishing the slab. Neither of the models cope with water vapour. And given that most things organic are mostly made of water, that does seem to be a serious gap.

However, while the models may be a little inaccurate, there is plenty of flexibility for things to get worse (or better?) because of the way global warming couples with acid rain, deforestation, and any other bit of random environmental vandalism.

So, things will be bad. There is lots of evidence to say that things will be bad. The models agree that things will be bad, though they disagree over what will be worst. In general, streams will be generally drier, catastrophic events (floods and droughts) will be more frequent, and more catastrophic, and alpine animals and plants will have to become atmospheric. We have until 2030 or maybe 2070. If its 2030, we will probably still be alive to see the horror of it all.
I suggest you ask someone else for a review, I am still in shock."

Speaker: PROF. SAM LAKE, Monash University.

GLOBAL CLIMATE CHANGE AND AUSTRALIAN LIMNOLOGY.

In spite of the protestations of cynics and exploiters, there is now little doubt that climatic changes due to global warming, induced by rising levels of greenhouse gases in the troposphere, are in train. Temperatures are predicted to rise more sharply in the high than in the low latitudes and such changes will in turn trigger changes in precipitation and in hydrology at the regional level. Rising temperatures may pose problems for aquatic stenotherms especially those at high altitudes, and may change life history scheduling for many species. Hydrological changes include changes in discharge volumes, flow regimes, flow duration for temporary streams, lake and wetland volumes and levels, and the severity and frequency of extreme events. Such changes in freshwater systems may induce changes in species abundance and distribution (including extinctions), community composition and dynamics and ecosystem functioning. Some of these predicted changes will be outlined. If Australian limnologists are to take global warming seriously, there is an imperative need to now initiate long-term observations and experiments on key forms of changes, in selected ecosystems and in critical localities and to undertake short-term experiments to determine the critical effects . Of course this may not happen given the difficulties in getting funds to carry out ecological research at large spatial scales over long time periods.

1. CHANGE OF SPEAKER

Due to unforeseen circumstances we have a change of speakers for the next Victorian Chapter Seminar, with Tim Doeg to speak on the 21st of June and Jane Doolan to speak later in the year (to be confirmed). Tim's talk will be relevant to many of those who would have attended Jane's talk, and will focus on environmental flows (see Tim's postcard this issue for an idea of the talk). Further details will be emailed closer to the time of the talk.

2. NEW VENUE

Please note that there is a new and improved venue for the Vic Chapter talks. Due to an unexpected departure of the publican at the Sir Robert Peel we have moved to The Retreat Hotel, 226 Nicholson St, Abbotsford.

Judging by the numbers that turned up for Sam Lakes talk (between 40 -50 people - well done!) most people are aware of the new venue. Those that didn't, you do now!

The speakers remain the same as listed in the previous Newsletter.

Any queries contact Rhonda Butcher or Ros StClair.

CONFERENCE CAPERS

July 21, 1999 – The Basics of Riparian Management, Goulburn Ovens Institute of TAFE, Seymour Campus, presented by the River Basin Management Society. Contact Jennifer Davis, C/O Dept of Civil and Environmental Engineering, University of Melbourne, Parlville, Vic. 3052.

September 22-14, 1999 – 2nd meeting on plant processing in freshwaters, Biological Station Lunz (Austria), presented by the Institute for Limnology Austrian Academy of Sciences. Contact Maria Leichtfried, email maria.leichtfried@oeaw.ac.at or office.bsl@oeaw.ct.at

October 11-16, 1999 – International Conference on Tropical Aquatic Ecosystems Health, Management and Conservation, Nainital India, presented by the International Association for Limnology (SIL) and Aquatic Ecosystem Health and Management Society. Contact Dr Brij Gopal, School of Environmental SciencesJawaharial Near University, New Delhi 110067, India. Email NIE99@hotmail.com.

November 16-17, 1999 – Wetlands and Remediation: An international conference, Salt Lake City (USA), presented by Battelle Memorial Institute. Contact Karl Nehring, email NehringK@battelle.orh

MEETING OF THE AUSTRALIAN WETLANDS ALLIANCE
SYDNEY, 20th February
REPORT and MINUTES

Attending Roger Jaensch, Wetlands International; Judy Messer, Nature Conservation Council, NSW; Ray Polglaze, Coast and Wetlands Society; Di Tarte, Australian Marine Conservation Society; Chris Prietto, Shortland Wetlands Centre; Tony Flaherty & Kirsti Sampson, Marine and Coastal Community Network (observers); Angela Brady.

Apologies Don Saunders, Rachel Siewert, Pip Walsh, Stuart Blanch, Michelle Handley, Max Finlayson, Phil Straw, Sandra Harding, Peter Nelson, Brian Everingham, Eddie Hegerl, Michelle Grady, Jamie Pittock

Business arising from Minutes of the Previous Meeting

National Report: is still not released. The Minister has sought further advice on one issue. It will be posted on Environment Australia and Ramsar web sites when finalised

Nature Conservation Council, NSW: Papers from the successful November 1998 Conference on Wetlands will be released at the *New Solutions for Sustainability* Conference on integrated natural resource management, 4-5 March, Sydney. For more information contact 02 9279 2477 ph, 02 9279 2499 fax, <water@nccnsw.org.au>

Asia Pacific Wetlands Managers Training Program: AWA comments on this CoP6 initiative triggered significant response from Environment Australia and were removed from the National Report. A letter was sent to the Federal Minister for the Environment highlighting AWAs concern that the proposed National Tropical Wetlands Research Centre meet CoP6 commitments. Reports from Max Finlayson (Australian Society of Limnology) indicated that the inclusion of temperate concerns in the training programs was being addressed, and Max's most recent communique was very positive.

The meeting recognised the need to link this training with other wetland programs, and training in other natural resource areas. *#obtain and circulate information on draft training program to allow AWA input*

Threatened ecological communities: federal legislation is currently under review for incorporation in the *Environment Protection and Biodiversity Conservation Bill # obtain information on the format of any amendments*

Wingecarribee / Peat mining A concern was raised regarding the loss of the right to take legal action if land ownership was transferred between government departments. *#check this with Environmental Defenders Office*

Ramsar Oceania Meeting: Roger Jaensch added further comment regarding the focus of this meeting.

 # ascertain level of sponsorship for Pacific Is observers to CoP7

Regional meetings: Shortland Wetlands Centre held a 1/2 day community forum- it is proposed to expand this format into a regional workshops *# develop outline for pilot program for NHT funding*

Commonwealth Implementation Plan and ***Draft Australian Recommendations:*** Letters were sent to Environment Australia outlining AWA concerns. At present only the Wetland Pest species recommendation is mentioned on the Ramsar website

1 Australian Wetlands Day

The Victorian Wetlands Trust proposed an Australian Wetlands Day in recognition that the December- January holiday period makes it difficult to organise and publicise suitable events. As World Wetlands Day is held on the anniversary of the Ramsar Convention the meeting decided that this date should continue to be celebrated, especially for issues of national or international importance. However it was agreed that spring would be a suitable time to focus on regional and local issues. The meeting proposed to request that each State and Territory government include a *State Wetland Day* as part of Water Week which is held in October of each year.

 # determine level of support from AWA groups in each State / Territory

 # contact relevant departments at State and Federal level- by phone, then letter (see attachment)

2 AWA contributions

$1,775 has been donated by member organisations to date **(see attachment)**. If your organisation has not yet considered this voluntary levy please raise this matter at the you earliest possible convenience. If the invoice has been mislaid please contact Angela for a copy. If your organisation is unable to contribute an acknowledgment that the matter has been reviewed would be appreciated

The meeting noted the significant financial support of the Australian Marine Conservation Society in hosting the AWA Secretariat and providing logistical support for CoP6 during 1996. It was agreed to circularise current and projected expenditure

3 AWA Position Paper / Identification of Ramsar sites undergoing ecological change

A draft outline was presented for discussion at the meeting, changes were signaled and have been sent to Michelle Handley the AWA Representative on the Australian Delegation. Highlighted was the need for the Paper to reflect concerns of international and national importance; provide the mechanism to develop a consolidated view point of Australian NGOs, and provide a basis from which groups can lobby CoP.

Michelle has the opportunity to use this paper to promote the consolidated view of NGOs during early negotiations with the Delegation prior to CoP7. Your prompt attention to her request will enable AWA to influence the decision making process. # *Consolidation of position paper responses to be performed by Michelle, Angela and Reference Group*, (it is proposed that substantive work to be compiled by Mid March, signing off at last AWA meeting)

The meeting agreed to highlight 3-4 Ramsar sites as icons, representing a range of issues that hamper the conservation of sites throughout Australia.

4 NGO Pledge

Only a few member groups provided information on their actions in fulfilling the NGO pledge of CoP6 to Eddie Hegerl of AMCS. It was agreed to include a more comprehensive report as an appendix of the Position Paper. To assist member groups report on their activities an outline is attached

 # Please fill in and return to Angela Brady

5 AWA representation at CoP7 / display material

The meeting identified some goals of AWA presence at COP7 and how this is likely to be achieved.

FUNCTIONS

Administration and coordination

develop consolidated view of AWA prior to CoP7; distribute AWA position paper at CoP7; set up display; organisation of meetings

Chair / spokesperson of Australian NGO delegation

daily meetings of AWA members will occur during CoP7. The Chair would be required to ensure decisions reflect the consolidated AWA position

Information / media output

Develop and maintain media links to Australia; generate media / newsletter information for distribution at CoP and to Australia; collect information for AWA groups

Highlight NGO support for Bureau functions

 # identify key contacts in Australia prepared to disseminate information to Media / AWA

 # identify AWA members to collate information

Advocacy

promote and lobby consolidated view of AWA; promote Oceania; maintain contact with Australian delegation: liaison, advisory and watchdog role; liaise with international NGOs; develop links in Australia for rapid response to issues; ensure links with the Environment Minister's office if concerns develop regarding the direction of the delegation

All AWA members attending to undertake advocacy functions

identify AWA member to liaise with the Minister's Office

ATTENDING

Di Tarte, Angela Brady, Chris Prietto, Judy Messer, Roger Jaensch, Michelle Handley, Eddie Hegerl (AMCS), Jamie Pittock (WWF), Cath Webb (NPA), Doug Watkins WI-Oceania, Tony Flaherty (MCCN- observer)

#please notify Angela if you know of others attending

#check requirements for NGO accreditation at CoP7, if Hill requires letter requesting support draft and email out standard form

DISPLAY

 # display space available at Costa Rica? Angela

 # member groups please indicate availability of display material (esp Ramsar sites)

 # Reference Group to agree on design

LOGO

The meeting agreed that a logo to link display material and label AWA documents would be useful.

 # request expressions of interest by mid-March, decision by Reference Group

 # time frame: call of interest- Mid March; decision- end-march

next meeting Mid April

ATTACHMENTS

LETTER TO SENATOR HILL / STATE ENVIRONMENT MINISTERS

The celebration of World Wetlands Day Offers the Australian Nation an excellent opportunity to celebrate its ongoing commitment to wetlands conservation and wise use.

However, many small non-government environment and community based groups have difficulty in initiating and celebrating events so early in the year. AWA would like to suggest that during Water Week each State Government should include a State Wetlands Day (e.g "South Australia Wetlands Day"). This State based focus could be used to highlight each States policies and achievements regarding wetlands conservation.

The State Wetlands Day would be complimentary to World Wetlands Day which is of international significance through its link to the Ramsar Convention on Wetlands of International Significance.

PAYMENTS RECEIVED BY AUSTRALIAN WETLANDS ALLIANCE

AWA contributions to date- thank you to those groups who have contributed

$100	Coast and Wetlands Society
$25	Shorebird Study Group of BOAT
$100	Queensland Conservation Council
$100	Port Phillip Conservation Council
$300	NPA of NSW Incorporated State Council
$700	WWF - Australia
$100	National Parks Assoc ACT
$100	Conservation Council of WA
$150	Conservation Council of SA
$100	Qld Wader Study Group
$1,775	

BRISBANE PLEDGE REPORT FORM

Based on WWF USA draft

(1) Name/ Address of NGO:
(2) Brief Description of Mission:
(3) If site specific name of wetlands where activity conducted:
(4) If program or campaign is not site- specific, what geographical area covered?
(5) Dates of activity or event, duration of program:
(6) Please describe how program or activity has implemented the Brisbane Pledge:

The NGO Pledge sets out the following commitments. Please use these as a guide to answering

(i) Striving to prevent any further degradation or loss of wetlands
(ii) Promoting or carrying out inventories of wetland resources, and monitoring status and trends in the ecological character of wetland sites and the catchments that surround them
(iii) Promoting and participation in the restoration of degraded wetlands and entire catchments
(iv) Continuing to work with governments at all levels to establish community based education, information, training and management programs, in order to adequately convey the ecological, economic and cultural values of conservation and the wise use of wetlands
(v) Working with private landholders at wetland sites and in surrounding catchments to promote land use activities that are compatible with wetland conservation and wise use, communication with landholders the value of wetlands, and seeking opportunities for landholders to share in the economic benefits associate with ecologically sustainable use of wetlands
(vi) Facilitating the development of collaborative relationships between NGTOS, local communities, indigenous peoples, governments, educational institutions and the private sector to promote conservation, restoration and wise use at the field level
(vii) Assisting local communities and indigenous people in accomplishing the conservation of their wetlands and ecologically sustainable use of their resources, while helping to improve the quality of their lives and ensuring that they share in the economic benefits associated with wetland conservation

7. Summary of achievement, lessons learned / special observations:

8. Approximate costs incurred (include the direct and indirect costs, value of services or in -kind contributions to assist other NGOs in their planning
9. Name and address of contact person for further information

please use the standard numbering where-ever possible to enable ease of collation

Stay tuned - there is one on the way

BIBLIOGRAPHY

Please send publication info to Russel Shiel, CRC Freshwater Ecology, P.O. Box 921 Albury, NSW 2640

WARNING

THIS SECTION WILL BE CLOSED (DUE TO LACK OF INTEREST)

UNLESS

SIGNIFICANT CHANGES OCCUR TO THE VOLUME OF CONTRIBUTIONS IN THE NEAR FUTURE - ED

ASL VOLUNTEERS

The following people have volunteered to speak as experts on behalf of the ASL. If you wish to be included on the list contact:

Dr Richard Marchant (ASL Secretary)
Email: rmarch@pioneer.mov.vic.gov.au

The following members are prepared to speak on behalf of the ASL on their area of expertise.

Name	Area of Expertise	Contact Details
Prof A. Arthington	in stream flows, ecology of exotic fishes, conservation of rare fishes.	Centre for Catchment & Instream Res, Griffith University, Natham Qld. 4111. Phone (07)275 7403 , Fax: (07)277 3759
Dr P. Boon	Bacteriological issues, wetlands.	Environmental Management, Victoria University of Tech., PO Box 14428 MMC, Vic. 3000. Phone (03)9365 2214, Fax (03) 9365 2465. email: paul.boon@vut.edu.au
Dr A. Boulton	Intermittent streams, hyporheic zones, Flinders Ranges	Ecosystem Management, University of New England, Armidale, NSW 2351. Phone (02) 67733760, Fax (02) 67732 769 email: aboulton@metz.une.edu.au
Dr M. Brock	temporary wetlands, aquatic plants	Botany Department, University of New England, Armidale NSW 2351. Phone (02)67732 578, Fax (02)67733 283 email: mbrock@metz.une.edu.au
Dr S. Bunn	stream ecology, ecology of riparian zones, biomonitoring	Faculty of Environmental Sciences, Griffith University, Nathan, Qld 4111. Phone (07)8757 407, Fax (07)875 7459, email: s.bunn@ens.gu.edu.au
Dr T. Entwisle	taxonomy and ecology of freshwater macroalgae	Royal Botanic Gardens, Mrs Macquaries Road Sydney NSW 2000 phone 02 9231 8113, fax 02 9251 4403 email tim_entwisle@rbgsyd.gov.au
Dr M. Finlayson	wetlands, Ramsar convention	Alligator Rivers Region, Office of Supervising Sci, Post Office, Jabiru, NT 0886 Phone (08) 89799756, Fax (08) 89792149 email:maxf@eriss.erin.gov.au
Dr T. Grant	platypus biology	Biological Science, University of NSW, PO Box 502, Cronulla, NSW 2230
K. Hortle	impact of mining, impact of development in Se Asia and PNG on rivers	Environmental Management, 18 Sharrow Road, Mitcham, Vic. 3132 Phone and Fax: (03) 9872 4101

Dr P. Horwitz	Conservation of freshwater invertebrates	Dept of Science, Edith Cowan University, Joondalup Drive, Joondalup, WA 6027. Phone (08) 94055717, Fax: (08) 9300 1257 email: phorwitz@cowan.edu.au
Dr P. Humphries	fish ecology, in-stream flows	CRC Freshwater Ecology, MDFRC, PO Box 921, NSW 2640. Phone (02)6043 1002, Fax:(02)6043 1626 email: hump@watson.canberra.edu.au
Dr G. Jones	Cyanobacterial blooms	Phone: 07-3896 9516, Fax: 07-3896 9525 email:gary.jones@dnr.qld.gov.au
Dr P.S. Lake	stream ecology, conservation freshwater biota	Ecology & Evolutionary Biology, Monash University, Wellington Road, Clayton, Vic. 3168. Phone (03)9055 653, Fax:(03)9055613 email:p.s.lake@sci.monash.edu.au
Dr V. Matveev	plankton food webs, biomanipulation	MDFRC, PO Box 521, Albury, NSW 2640. Phone: (060) 431002, Fax: (060) 431626.
Dr R. Pearson	tropical freshwater ecology	Zoology Dept. ACTFR, James Cook, University, Townsville, Qld. 4811. Phone:(077) 814 262, Fax: (077)79 6371
Dr W. Ponder	freshwater molluscs	Malacology, Australian Museum, 6 College Street, SYDNEY 2000 Ph: (02) 9320 6120 Fax (02) 9320 6050 Email:winstonp@amsg.austmus.gov.au
J. Puckridge	ecology of arid zone rivers, ecology of freshwater fish	CRCFE, Zoology Department, University of Adelaide, Adelaide, SA 5005. Phone (08) 83034455. Fax: (08) 8303 4364 email:jpuckrid@zoology.adelaide.edu.au
Dr N. Rea	wetland plant ecology, water regime, weeds and conservation	Water Quality Branch, Department Lands, Planning and Environment PO Box 567 Palmerston NT 0831 Phone (08) 8924 6403, Fax: (08) 8924 6410, email: naomi.rea@nt.gov.au
Dr R. Shiel	planktonic & littoral microfauna, billabong ecology.	MDFRC, PO Box 921, NSW, 2640. Phone (02)60431002, Fax: (02)60431626 shielr@mdfrc.canberra.edu.au
Dr L. Townley	groundwater-surface water interaction.	CSIRO Division of Water Resources, Private Bag, Wembley, WA 6014 Phone (08) 9387 0329, Fax: (08) 93878211
Prof. W.D. Williams	Salt lakes	Zoology Dept, University Adelaide, Adelaide SA 5005. Phone (08) 8303 4455, Fax: (08) 83034364

ASL MEMBERSHIP FORM

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Position: .....

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Qualifications:.....

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Student: ( )
Super delux (i.e. 10 years): ( )

Limnological interests: .....
.....

Student declaration

I am a full time student at.....

Signed .....

Student status confirmed by Supervisor.....

Signed ..... Date.....

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Super Delux (i.e. 10 year)	$325.00

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Please Return to Margaret Hart
Treasurer/Membership Officer
22 Netherby Ave
Mulgrave Victoria Australia 3170

REGIONAL EXECUTIVE MEMBERS 1998-99

NSW Ms Deb Nias
Dept Land and Water Conservation, PO Box 380, Dareton NSW 2717
ph: 03-50274303, fax: 03-50274769; email: dnias@dlwc.nsw.gov.au

Qld Dr Gary Jones
CSIRO Land & Water, Sciences Centre, 80 Meiers Rd., Indooroopilly, Qld 4068
Ph: 07-3896-9516 Fax: 07-3896-9525
Email: gary.jones@dnr.qld.gov.au

SA Ms Kerri Muller
Botany Dept, University of Adelaide, SA 5005
Ph: 08-8303 4560 Fax: 08-8232 3297
Email: kmuller@botany.adelaide.edu.au

WA Dr Jenny Davis
School of Environmental Sciences, Murdoch University, Murdoch WA 6150
Ph: 08-9360 2939 Fax: 08-9310 4997
Email: davis@essun1.murdoch.edu.au

ACT Dr Ralph Ogden
Dept. of Applied Science, University of Canberra, PO Box 1, Belconnen ACT 2616
Ph: 02-6201 2033
Email: ogden@science.canberra.edu.au

NT Ms Ruth O'Connor
School of Biological Sciences, Northern Territory University, Darwin NT 0909
Ph 08-8946 6761 Fax 08-8946 6847
Email: r_oconnor@banks.ntu.edu.au

VIC Ms Rhonda Butcher
Dept. Ecology & Evolutionary Biology, Monash University, Clayton, VIC 3168
Ph: 03- 9905 5643 Fax: 03-9905 5613
Email: rhonda.butcher@sci.monash.edu.au

Tas Dr Jean Jackson
118 Wentworth Street, South Hobart, Tas 7004
Ph: 03-62237133 Fax: 03-62237133
Email: jeanj@ifc.tas.gov.au

EDITORIAL ADDRESS

Ivor Growns, AWT, P.O. Box 1357, Albury, NSW 2640
ph (02) 60583878 fax (02) 60583888
email igrowns@awcnet.aw.latrobe.edu.au

If not deliverable please return to:
Australian Society for Limnology
22 Netherby Ave
Mulgrave, Vic 3170

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Dr R. Marchant
Invertebrate Survey
Museum of Victoria
71 Victoria Cres
Abbotsford
VIC 3067